

# COAL AGE

The Weekly Journal of the Coal and Coke Industries

Volume 18

NEW YORK, THURSDAY, NOV. 4, 1920

Number 19

## Putting Prices Down

**T**AKING Attorney General Palmer's assurances of good faith at face value the bituminous coal operators at Cleveland adopted the only course open to them in controlling prices. Collectively they agreed to take the subject of prices back home, where each field and group could best act. Definite assurances were sent out from Cleveland that prices will be reduced; the country is expecting the operators to make good on the promise.

The essence of the Cleveland resolution (*Coal Age*, Oct. 28, page 915) is that the industry recognized that prices, in part at least, have been unreasonably high and that some trade practices have been unwise. The industry deplores such things and at the request of the Government will seek to cure these conditions. It is important to note that these resolutions promise to *condemn and eliminate* unwise practices, among which, it is assumed, is that of charging unreasonably high prices.

It will not suffice for nine out of every ten operators to refrain from charging such high prices, unless the tenth man, who will not voluntarily follow the spirit of the resolutions, is forced into line. It has been made evident time and again by the Attorney General and his many assistants that evidence is necessary to convict, that the honest coal man must help the department in bringing the dishonest or unwise individual to the sense of his responsibility, if not actually before the bar of justice.

The meeting at Cleveland and the Fair Price Committees at home will not satisfy the country or the Attorney General unless the sales of coal at what every man knows are unreasonably high prices are stopped at once, even if to accomplish this it is necessary for the operators themselves to publicly brand the guilty.

## An Early Decision Wanted

**E**VERY effort should be made to hasten the decision of the Supreme Court in the Lambert Run Coal Co. case—the assigned-car suit—which originated in the Fairmont field. It will be remembered that the decision of the Circuit Court, from which appeal to the Supreme Court has been had, was to the effect that the Transportation Act gives the Interstate Commerce Commission power to authorize the assigning of cars by the railroads for fuel coal when an emergency exists and when, because of car shortage, the railroads cannot otherwise obtain necessary fuel. This was the basis of the order of the commission last April, when assigned cars were authorized for the first time after they had been banned by the President at the instance of Dr. Garfield early in 1918. Should the Supreme Court agree with the last decision in the Lambert Run case and, as is generally expected, there be no car shortage and no emergency the coming spring, then the commission

will of necessity rescind its permission to the railroads to assign cars for fuel.

As can well be imagined, this will have a very material influence on the contract market next spring, for if the railroads cannot buy coal in part with car supply they will be no better off than any other consumer and their business is likely to be more generally distributed than otherwise would be the case. The question should by all means be concluded at an early date in order to avert confusion in the contracting period such as characterized the market in 1918, 1919 and again this year, because of the policies of the railroads in buying fuel coal. Without a final decision at an early date everyone will be uncertain and confused on this class of business, which represents more than one-third of the commercial coal that enters the market.

## Our Lack of Facts

**W**HATEVER may be the disadvantages of any form of governmental control and regulation of business, it certainly never proceeds without definite and positive facts. Our own Fuel Administration was successful in the degree to which it collected facts and used them and the most refreshing thing about the present controversy between the British coal miners on one side and the owners and Government on the other is that they are armed with the same set of basic, and practically uncontroverted and incontrovertible, statistics. The only points about which they may now argue relate to what the future may develop in considering the facts at hand relating to the past and present.

In other words, each side has positive knowledge of the earnings of the men, the cost of production of coal, the sales prices and the profits to the owners as well as the part that the Government takes as its share. The miners know, for instance, that the industry in Great Britain earned as surplus after deducting interest, depreciation, capital adjustments and the owners' fixed profits, the sum of £750,000 in the three months ended last June. They are asking an increase in wages which it is estimated will add about £7,000,000 per quarter, without being willing to give any assurance that they will increase the output of the mines (which they have in their power to do) to enable the producers to export more coal and thereby increase the surplus from which to pay the increase in wages.

It was not possible last winter after our strike to reduce the demands of the miners in this country to such a simple basis because we did not have the data regarding costs and profits in a form that was acceptable to all. This winter the coal industry is going before the bar of public opinion and will be subjected to the investigation of Congress because of the high prices that have been the rule in the open market last summer and the present autumn. How are you to meet the charges? Nothing short of full, accurate statistics

on costs of production, selling prices and realization as well as profits will satisfy any impartial investigator. It cannot fail to be brought out that the figures that the Government was collecting along these very lines have been withheld by the legal proceedings instigated by the coal operators themselves, and at a time when the prices were just getting well started on an upward swing. It cannot fail to be noted that the data on costs collected by the Federal Trade Commission were at best incomplete and cover but the first few months of the year.

Colonel Wentz has opened the way for the industry to redeem itself in this regard. He has announced that the National Coal Association will circularize its membership, which includes 60 per cent of the total production of bituminous coal, with questionnaires asking for the production, sales, costs of production and selling, realization from sales, and profits, and that he will compile the reports he receives in order to be prepared for Congress and the investigators this winter. If the operators will but give him the figures he asks for and will give them at once in order that the huge job of compilation may be completed in time, he will be prepared to present the case of coal as it should be presented. If the operators—not a few, but many, if not all—do not fall in with this proposal, then Colonel Wentz and the other officers and representatives of the operators in their national organization will have to battle unarmed.

### *We Get What We Pay For*

**D**URING the last ten years industrial management has made tremendous strides in the United States. System has been a demigod in factory organization. Quantity production, through systematized planning and routing, division of labor, time studies and bonus systems, has been developed in this country till today the American factory system leads the world. When the United States went to the assistance of Europe in the production of war materials, both here and abroad, the foreigner marveled at our efficient factory methods.

Coal mining is an industry greater in point of investment, value of output and number of employees than any of those in which such strides in scientific management have been made. For our vaunted superiority in obtaining lower operating costs than foreign coal producers public opinion generally gives all the credit to favorable natural conditions, and it is true that we have hardly yet begun in the coal industry to travel the road of scientific organization and management. Cheap mining has made cheap coal, and both producer and consumer have been correspondingly careless in developing better, more efficient and cheaper methods of mining and burning coal.

With marvelous results that humblest of occupations, shoveling, has been made in the iron and steel industry the subject of scientific inquiry. Traffic vs. transportation as a study is yet to be developed in coal mines, but it is a subject for ever-increasing investigation and progress in the world of daylight. Functional vs. military systems of management have advocates in factory organization, but, in coal mining, executives have but hazy ideas of the relative merits of either and, as a result, mine organizations are haphazard and in general represent the growth of tradition. They are not the product of modern thought.

In a paper by Daniel Harrington, an engineer of the Bureau of Mines, in this issue of *Coal Age*, some of

the shortcomings of our system of coal-mine organization are concisely set forth. Mr. Harrington points out that the law places upon the fireboss responsibility for the safety of the men, but he is so restricted in his authority, so poorly paid and overworked as to decrease his possibility for usefulness. It would appear that a clear separation of the functions of the fireboss and mine foreman or superintendent would cure this trouble, elevating the fireboss without lowering the position of the other officials.

The fireboss is so vital a force for safety in the mine that the industry cannot afford to see his position lowered. Supply and demand may well be expected to regulate the pay of those who are engaged in production. We readily see that it pays well to give a bigger wage to larger producers, but when we come to consider agents for safety or education, supply and demand are found less readily operative. We probably never will be without teachers, regardless of the rate of pay, but the quality will deteriorate till we might as well provide no instruction at all for our youths or children. Regardless of wage or salary, we may be able to get state inspectors and officials for our Bureau of Mines, but what good will they do us if those we secure do not have powers of direction and leadership; if their judgment, ability and experience are such that we shall ignore their advice and scout their authority?

So also with firebosses; they are and will be what they pay them. If we really value safety we will buy it at the price it should command; we will give it the opportunity it requires; we will seek it in the market in which it may be bought; we will buy it in such quantity as its importance deserves. But, if we do not value safety we will pay for it sparingly; we will give it little opportunity; we will seek it in the market where we get our least instructed labor; we will purchase as little of it as will pass muster.

Is it the law that gives us firebosses or do we engage them out of a high sense of duty and responsibility and with a knowledge that the safety of the persons in the mine and the safety of the mine itself are the ends we have at heart? Do we want cheap or real insurance? Do we want a policy that does not protect or one that gives us full protection? Do we want a fireboss who saves life or one who endangers it?

SO MUCH CRITICISM of the railroads has been uttered by the coal operators and so much feeling has at times been evident on the surface between these two big industries, that friends of both will rejoice in the unstinted praise of Daniel Willard and the Association of American Railway Executives, of which he is chairman, publicly expressed by the president of the National Coal Association at the Cleveland meeting.

IN COAL MINING adequate safety has always had to face opposition from inadequate funds. Now that coal mining has been profitable for some years there is no longer that reason for neglect in providing all that safety demands. In 1920 the short running time should have furnished plenty of opportunity for reconstruction work in relation to safety and the profits at bituminous mines—where long-time contracts were not too numerous—should have furnished the money. The mines therefore should be safer by far today and so in a degree they are. However, it is hard for an industry to outlive the disposition to take short cuts which early penury inculcates.



# Jobber vs. Producer Under the Lever Act

"Prices" Apply to Sales by Producer—"Rates and Charges"  
Cover Additions by Jobbers and Dealers—Section 4, Drafted to  
Catch Avaricious Middleman, Declared Inapplicable to Producer

BY E. J. MCVANN\*

**D**URING the recent argument before the U. S. Supreme Court of various cases arising under the Lever Act an incident occurred of tremendous importance to the coal operators of the country. Little or no attention was paid to it, however, because the interest of everybody was centered upon the main question before the Court—the constitutionality of the law and whether the definition of crimes contained in it was sufficiently clear to be made the basis for a criminal indictment.

Solicitor General Frierson was presenting the case for the Government. He stated that he wished to make clear to the court the construction the Department of Justice placed upon section 4 and went on to explain the use of the phrases "rates and charges" as compared with "prices."

## COAL OPERATOR NOT STRICTLY A PRODUCER

I will not attempt to quote the Solicitor General, but the effect of what he said was that during the long period since August, 1917, during which the Lever Act was administered, the word "prices" had been used in connection with sales made by the producer or manufacturer and the words "rates and charges" to cover the additions made by the dealer or middleman and that the administration, in its representations to Congress which resulted in the passage of amended section 4, had made it clear that what was wanted was a law which would enable the Government to get after the "avaricious middleman" and that a producer or manufacturer could hardly be indicted under the amended section unless he "conspired, agreed, combined, or arranged with" another person or persons to "exact excessive prices." Congress, he added, said "prices" where prices were meant and "rates and charges" where the middlemen were concerned.

I think the learned Solicitor General realized, when he had heard his own words, the far-reaching importance of them, because he immediately sought to qualify them by suggesting that, in the view of the Department of Justice, the coal "miner" (operator) was not, in the strict sense, a producer. He was called upon at once, from the bench, to explain this attempted exclusion of the coal operator from the ranks of the producers, but did not succeed very well. Justice Pitney, by one or two questions, disposed effectually of the distinction sought to be made, and the Solicitor General dropped the point and went on with his argument.

## CONSPIRACY NECESSARY TO INVOLVE OPERATOR

In every case where my advice has been asked upon the construction of section 4 I have placed the same construction upon it as that stated by the Solicitor General, viz., that the language "to make any unjust or unreasonable rate or charge in handling or dealing in or with any necessities" could only apply to the middleman or other person who rendered a service as distinguished from producing and selling, and that the only offense which could be charged against an operator (or producer) in connection with price was that of "conspiring, combining, agreeing or arranging with" another person to "exact an excessive price." In other words, conspiracy was an essential part of the charge that must be brought against the coal operator for exacting excessive prices, while the charge of making unjust or unreasonable charge in handling or dealing could be made against any one person engaged in performing any of the services performed between the production and sale and the final delivery to the consumer.

Anyone who has been familiar with the administration of the Lever Act by the Fuel Administration and with the construction placed by Dr. Garfield and his associates upon it

and with the rules and regulations promulgated by them from time to time, will agree that there has been a distinct classification along the lines suggested by the Solicitor General. Whenever the Fuel Administration spoke of "prices" it always meant the price fixed at the mine, accruing to the operator. Whenever the administration dealt with the middleman, or other handler, it spoke of "gross margin," "compensation," "commission" or used some other term that made it clear that the allowance was for a service performed. Keeping that fact in mind and remembering that the Solicitor General advised the Supreme Court that the administration represented to Congress, when the amendment of section 4 was being considered, that what was wanted was a check upon "avaricious middlemen," it must be concluded that Congress used the language contained in section 4 advisedly and not loosely.

To obtain and sustain indictments against those engaged in the coal business, therefore, the representatives of the Department of Justice must follow the construction of the law laid down by its representative, the Solicitor General. The coal operator may not be charged merely with "exacting excessive prices" when the price he charges is excessive in the view of the Department of Justice; it must also be shown that he has "conspired, agreed, combined" or had an understanding with others to exact those prices. Hence all the widely heralded announcements of district attorneys and grand juries that anyone who exacts a price in excess of some figure named by them will be indicted and prosecuted is not of much effect as against a coal producer because if there is one fact about the coal operator that is known to all the world, it is that he understands thoroughly the unlawful character of any practice which even approaches combination, conspiracy, or agreement with others as to prices and that each coal operator has "gone it alone" upon this question and all others even remotely related to it. The coal operator has even balked at getting together with his neighbors to discuss the question of reducing prices for fear such action might be misinterpreted or misconstrued.

## WORDING TOO LOOSE TO BE INTELLIGIBLE

No cases involving coal sales or prices were before the Supreme Court in this argument. All were cases against retailers or wholesalers of "necessaries." The main arguments were upon the question of whether section 4 was constitutional or unconstitutional. The two big points urged were (1) that there was no definition in the section of a crime and that the language was too loose to permit a reasonable and law-abiding citizen to know when he was violating it, and (2) that the exclusion from the law of farmers, gardeners and others was an arbitrary classification that permitted a very large class to do, without breaking the law, what would be a crime if done by another class. Justice Hughes put one of these points quite effectively when he suggested that it was an amazing thing if the Congress of the United States, a year after the cessation of hostilities, could constitutionally enact a law which would operate to make it a crime for a retail dealer to sell a silk shirt over the counter in his store at Binghamton, N. Y., at a price considered unreasonable by a U. S. grand jury.

IN THE ARTICLE ENTITLED "Mine, Shut Down Over Sunday, Explodes When Power Is Turned On," which appeared in our issue of July 29, the author says that the "power is purchased from the West Penn Power Co." We have been assured that the power supplied was obtained from another source.

\*Attorney at law and secretary of the Smokeless Coal Operators' Association of West Virginia.

### Lackawanna Speeds Up Car Movement

Figures just compiled by the Delaware, Lackawanna and Western Railroad Co. show the progress of that company's efficiency campaign. The following figures show what the improvement has been:

AVERAGE MILES PER CAR PER DAY		
	1919	1920
March.....	22.5	26.9
April.....	25.1	*15.3
May.....	28.3	*24.7
June.....	28.3	33.0
July.....	29.3	31.1
August.....	31.4	34.0
September.....	30.2	31.9

TONS HAULED ONE MILE (THOUSANDS)		
	1919	1920
March.....	346,802	473,722
April.....	382,711	*232,354
May.....	431,246	*379,443
June.....	407,345	484,872
July.....	430,926	520,459
August.....	461,385	547,609
September.....	428,504	489,429

\* Strike period.

In presenting the figures the company said that even better results are now being attempted.

### Fuel Commission Sought in Kentucky

The Allied Public Service League, of Louisville, Ky., has appealed to Governor Morrow, of Kentucky, to call a special session of the State Legislature for the purpose of enacting legislation for the creation of a board such as the Indiana Fuel and Food Commission, with the right to regulate the price of fuel in the state. The organization charges that prices are too high and that distribution of cars has worked unfair discrimination against consumers of Kentucky.

### Movement of Coal Through the Panama Canal

During August 36,119 tons of coal passed through the Panama Canal from the Atlantic to the Pacific. Eight of the cargoes going to make up this total originated at Norfolk and one at New York. All were destined to points on the West coast of South America. Two cargoes of fuel briquets, originating at Norfolk, were consigned to Callao, and Iquique. One cargo of coal passed through the Canal from the Pacific to the Atlantic. It originated at Vancouver and went to Rio de Janeiro.

### U. S. Passes Great Britain in Exportation of Coal

In the Foreign Trade Record, of the National City Bank of New York, is a statement on coal which says in part: "The United States is now the world's largest coal exporter. Prior to the war we ranked third among coal exporters, our exports in the year immediately preceding the war having been slightly less than 20,000,000 tons against 76,000,000 tons by Great Britain and

approximately 30,000,000 by Germany. In eight months ending with August, 1920, our exports of coal were, in round terms, 23,000,000 tons, while those of Great Britain were in the same period but 18,375,000 tons and those of Germany far less than those of either the United States or Great Britain."

### New York Receives 11,000 Cars Of Coal in a Week

More than 11,000 carloads of coal were shipped into New York City during the week ending Oct. 23, Joseph Lonergan, chief inspector of the Health Department, reported to

## NEWS BRIEFS

### Terse Items Chronicling Events of Interest to the Industry

Health Commissioner Copeland. Of this total 6,000 carloads were anthracite and over 5,000 carloads were bituminous. The commissioner said if the city can "get by" the next few weeks the coal situation will be satisfactorily worked out. "Each one of these carloads," Dr. Copeland asserted, "contains forty-five tons, and the coal now being brought here is being sold to dealers at the regular price."

### Order Indiana Coal Men to Supply Home Needs

All coal companies in Indiana were ordered Oct. 23 by the State Coal and Food Commission to offer for sale each week within Indiana sufficient coal to meet domestic consumption. The commission set 1,600,000 tons of coal monthly as the quantity needed for the state and apportioned this supply among the companies, specifying how much each should supply weekly.

### To Conserve Natural Gas

According to a statement recently issued by the Bureau of Mines, the situation in regard to natural gas supply in the States of Ohio and Pennsylvania, which consume 54 per cent of the natural gas used for light, heat and fuel in this country, is so serious that extraordinary measures are being adopted by the authorities of both states looking toward conservation of the gas supply.

### E. S. Carman Is New Head of Mechanical Engineers

Edwin S. Carman, manufacturer, of Cleveland, has been elected president of the American Society of Mechanical Engineers in a mail ballot covering a membership of 13,000, comprising engineers, managers and technologists in every industrial centre of the country. Mr. Carman succeeds Major Fred J. Miller of New York, and will take office after the society's annual convention, to be held in New York in December.

### Marburg Refuses Shipping Board Post; New Yorker Wanted

Theodore Marburg, of Baltimore, U. S. Minister to Belgium under the Taft administration, has declined appointment by President Wilson as Republican member of the U. S. Shipping Board. Governor Smith of New York and Darwin P. Kingsley, president of the Chamber of Commerce of the State of New York, have sent telegrams to President Wilson urging the appointment of at least one Shipping Board Commissioner from New York.

### Three Railroads Make Record For Car Movement

Three railroads established new car movement records on Oct. 18. The Chicago, Burlington & Quincy moved 40,596 cars on that day, the New Haven 25,880 cars and the Mobile & Ohio 3,951 cars. The Pennsylvania on the same day came within one-tenth of 1 per cent of its record daily movement, the total on Oct. 18 being 144,444 cars.

### Wants All Coal Moved on Net Ton Basis

Plans for a renewed effort to have all coal moved on a net basis were discussed at the meeting of the Railroads Relations Committee of the National Coal Association, held in Washington Sept. 29. It was stated at the meeting that throughout two-thirds of the area of the country the net ton is being used exclusively, but it is not being used in the remaining third, which produces the majority of coal tonnage.

### Coal Miners in Alberta to Get \$1.15 More a Day

An increase of \$1.15 a day in the wages of Alberta coal miners granted by operators in conference with representatives of the United Mine Workers of America was announced Oct. 25.

### Steel Corporation Earnings Climb

Total earnings of the United States Steel Corporation for the third quarter of 1920 amounted to \$48,051,540, a gain of \$4,895,835 over the corresponding period in the preceding year.



# Preparing Anthracite for Market Without The Use of Water

**Anthracite May Be Prepared Either Wet or Dry—Dry Breakers Are More Exposed to Fire Than Wet—Mechanical Equipment and "Dust Suckers" Render Dry Treatment Almost as Free from Dust as Wet Preparation**

BY DEVER C. ASHMEAD  
Wilkes-Barre, Pa.

**P**ROBABLY most breakers now in use in the anthracite region employ wet preparation—that is, the coal is cleaned in jigs and on concentrating tables. This wet process is, however, by no means the only one followed. It is possible to prepare coal satisfactorily in a dry state. But, of course, the character

greatly minimized with wet preparation, as in that event the breaker is continually soaked with water. Fig. 1 shows a fire in the top of the breaker of the Kingston Coal Co. at Edwardsville, Pa. This building is a dry-preparation plant, and had it not been for the excellent fire protection provided it doubtless would have been

FIG. 1.

## Tower of Breaker on Fire

Strange to say, though this was a dry-preparation breaker, the arrangements for fighting the fire were so complete that the rest of the breaker was saved.

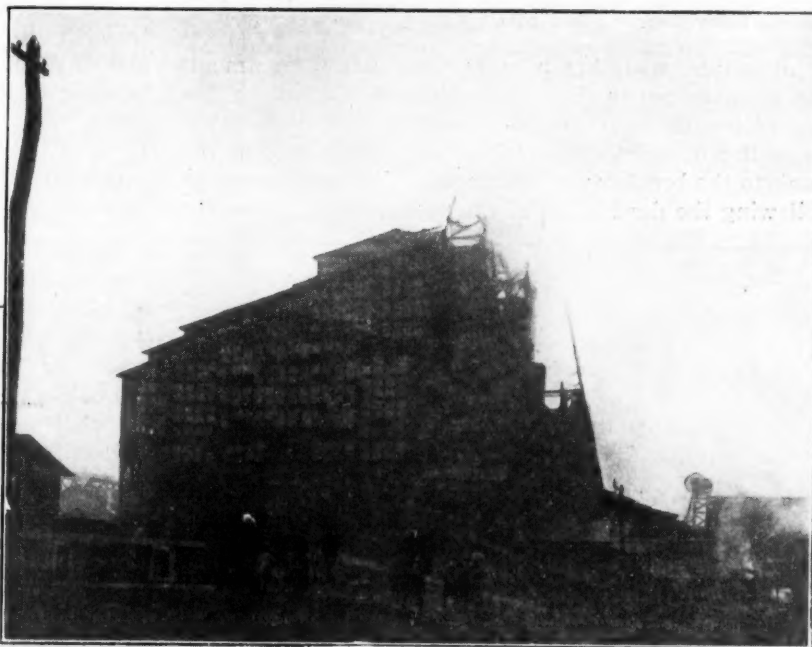


FIG. 2.

## No. 4 Breaker, Kingston Coal Co.

Lofty and well-lighted, the breaker is one of the most imposing of structures in the anthracite region but frequently one of the least handsome.

of the coal has much to do with the method adopted. Furthermore, the original design of the breaker must be considered when determining the method to be followed.

It is probable that if a breaker were being designed today, the wet method of preparation would be chosen, as it possesses some advantages over dry treatment. Among these might be mentioned the fact that no dust is made in a wet-preparation process, whereas by the dry method a considerable quantity is formed, and means must be provided for removing it as far as possible.

Another advantage of the wet over the dry process lies in the reduced fire hazard. The risk of fire is

entirely destroyed. After the fire was extinguished the damaged portion of the building was reconstructed, the result being shown in Fig. 2. This is the No. 4 breaker of the above-named company and is the one wherein the preparation methods described in this article are followed.

## ONLY SMALLER SIZES AND CULM ARE WASHED

Practically the entire treatment of the coal at this breaker is dry, the exception being that the smaller sizes are washed. Coal also from an old culm bank is being treated, and this material is jigged, but the treatment of this coal has no relation to the preparation of the freshly-mined material. The rewashed culm is not even

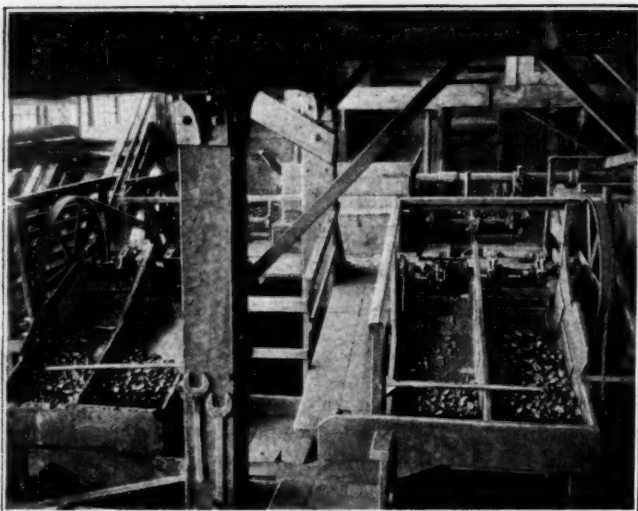


FIG. 3. JIGS IN NO. 2 BREAKER

Balustrades protect the runways and fences guard the machinery. Getting hurt, never too hard an accomplishment, is more difficult today than in years past.

being mixed with the prepared coal after treatment, but is consumed in the company's power plant for the generation of steam. It has a small part of the breaker to itself, a dragline conveyor bringing the culm from the bank to the breaker for treatment. For convenience in following the description of the preparation process the

numbers in parentheses occurring throughout the text are duplicated in the flow sheet. Thus each successive step may be readily followed.

From the various shafts which are tributary to this plant the coal is brought by storage-battery locomotives to the foot of the breaker. It is hoisted to the top of the building in self-dumping cages (1), and passes directly to a hopper (2). At that point it is fed by an automatic feeder (3) to a multi-deck shaker (4). The feeder was designed by employees of the company and has given excellent results. The shaker has four decks; the upper one separates lump from the remainder of the material; the second deck takes out broken; the third deck egg and the fourth deck stove coal. Material under stove size passes through the lower deck.

#### BREAKER DIVIDED INTO THREE SEPARATE PARTS

The lump then passes over a picking chute (5), which is an extension of the upper deck of the shaker. Here the rock is removed and goes to the rock crushers in the basement of the breaker, while the coal passes through the main rolls (6), and is crushed to broken and smaller. One of the interesting details of this breaker is the fact that it is divided into three main parts. All the coal from the rolls is prepared in the front of the building, while all the sizes from the upper screen are treated on the left side and all that passes through the shaker above mentioned is treated on the

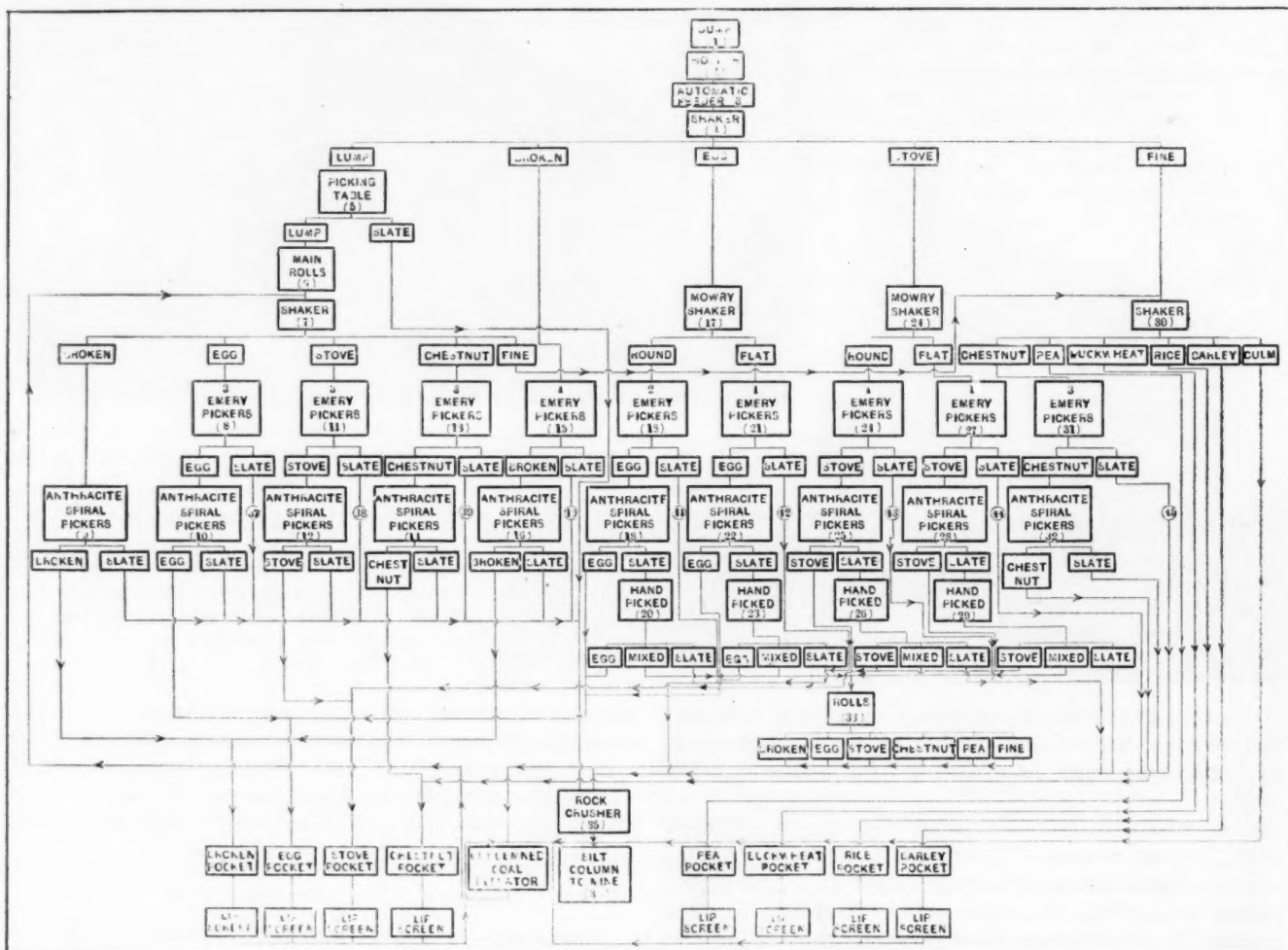


FIG. 4. FLOW SHEET OF THE DRY-PREPARATION PLANT

There is a degree of similarity in the treatment of the larger sizes—broken, egg, stove and chestnut. All pass through Emery and spiral pickers except coal that is made "broken" by hard experiences in the main rolls, which coal only passes over the spiral

pickers. Such of the egg and stove as is of that size as it comes from the mines goes also through the Mowry shaker and both are hand picked. Egg and stove, which have acquired their size in the main rolls, are treated on Emery and spiral

pickers and are not subjected to the Mowry shaker or the hand-picking process. The fine sizes—pea, buckwheat, rice and barley—are delivered direct to their respective pockets without undergoing any further treatment.





FIG. 5. PICKING TABLE AT NO. 4 BREAKER

Rough "coal" from the mines passes over this table and the slate is taken out by the pickers. All this slate is passed to a rock crusher with the finer slate from the spiral pickers. After it has been crushed it is flushed into the silt column and thence into the mine for hydraulic filling.

right side of the breaker. None of this coal is mixed in treatment until it reaches the pockets.

From the main rolls (6) the coal goes to a four-decked shaker (7) making five sizes. The broken passes to a set of anthracite spiral pickers (9), which remove the slate, the coal going to the broken-coal pocket, while the slate passes to the slate crushers (35), which have been mentioned already. The egg coal from shaker 7 is sent to three Emery pickers (8), where the coal and slate are separated and both pass over anthracite spiral pickers (10), the first to remove the slate from the coal and the second to remove the coal from the slate. Because it would make the flow sheet too complicated to depict all this in detail, the treatment of the coal by the anthracite spiral pickers is shown, but the treatment of the slate is not shown, except that the process is indicated by a small circle containing a number.

#### MOWRY SHAKER SEPARATES FLAT FROM ROUND

The stove and chestnut coal from shaker 7 receives exactly the same treatment as that accorded the egg. The treatment of the fine coal from this shaker will be discussed later when the preparation given to the remainder of the fine material is considered. Broken



FIG. 6. BATTERY OF EMERY PICKERS

Eighteen pickers do the picking before the spirals get in their work.

coal from the shaker 4 goes to an Emery picker (15), after passing which both coal and slate receive the same treatment as that given the egg. The egg coal from shaker 4 goes to a Mowry shaker (17), which separates the material into flat pieces and comparatively round pieces. The round pieces of slate and coal are then passed to two Emery pickers (18).

The egg coal and slate separated on these pickers are then sent to anthracite spiral pickers (19) and (41), where the coal is finally cleared of slate, and the slate is cleared of coal. The flat particles receive the same treatment as the round ones. The slate from the Emery pickers (19) and (41) is hand-picked, the coal being sent with the rest of the cleaned material, and the particles of slate that have coal adhering to them, and likewise those particles of coal that have slate attached to them are separated from the rest of the material and sent to another chute. The slate goes to the slate crusher (75) while the mixed particles containing both coal and slate go to the rolls (33), where they are recrushed so that the valuable may be separated from the worthless material. The product of these rolls (33) goes to an

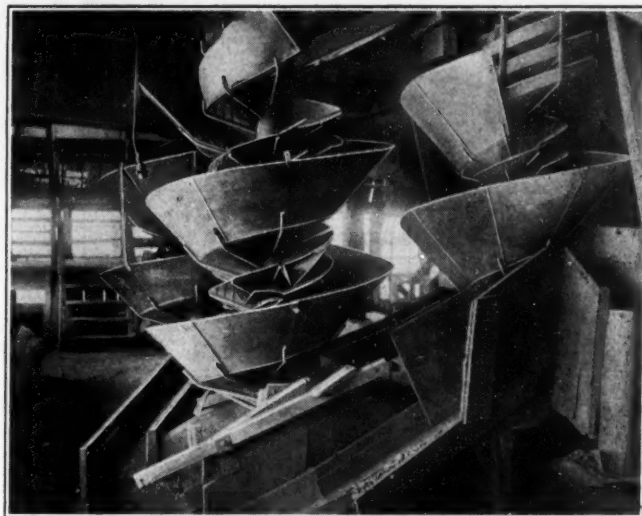


FIG. 7. ANTHRACITE SPIRAL PICKERS

Here the nimble coal by its wild action on the spiral soon leaves the sluggish, flat-bottomed slate, one being destined for the market and the other, after crushing, for the interior of the mine.

elevator and is raised to shaker 7, where it is recleaned and retreated.

Stove coal from shaker 4 receives a treatment identical with that accorded the egg. The fine coal from that shaker passes through another shaker (30) having five decks and making six sizes. The largest size made on this shaker is chestnut. This is treated on Emery pickers and then on anthracite spirals (32) and (45) in the same manner as has been described for the egg coal.

Pea, buckwheat, rice and barley coals are sprayed and the fine dust washed out. It is not necessary to give these sizes any further treatment, as this coal is practically clean. The culm or fine material that passes through the bottom deck of shaker 30 is returned to the mine for filling purposes, as it contains too much dirt to be of commercial value.

Broken coal from shakers 7 and 4 goes to the pockets for that size of coal. At times when this size cannot be marketed it is sent to crusher 33, where it is reduced to smaller sizes and sent by means of the condemned-coal conveyor to shaker 7 for retreatment. The egg coal

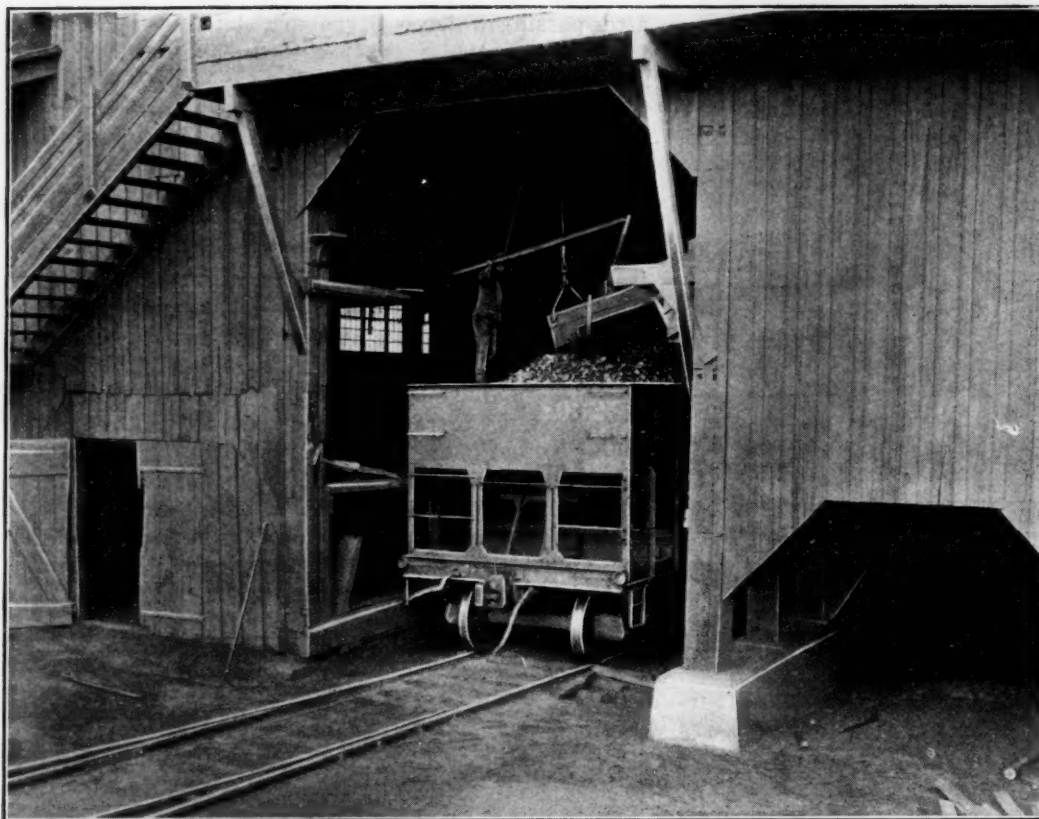


FIG. 8.

### Loading Chute

Filling a car of egg coal at No. 4 Breaker. This chute is designed to minimize breakage, so that the coal which has been so carefully sized in the breaker does not lose by degradation or create degradation sizes which may have to be screened out at the receiving yard.

from shaker 7 mixes with that made upon both decks of the Mowry shaker (17) after it has been cleaned on Emery and spiral pickers. Coal from both sources then goes to the egg pocket and is ready for shipment. The stove coal from shaker 7 unites with that from the Mowry shaker (24) in the same manner as did the egg, after which it passes to the stove-coal pocket. Chestnut coal from shakers 7, 4 and 30 is brought together after treatment and is sent to the proper pocket.

All the slate is collected at the rock crusher, where it is crushed to a sufficiently small size so that it is possible to send it through boreholes into the mine to be used for filling, or flushing, worked-out territories. Any coal that is condemned because it does not come up to the standard of the inspectors is sent to the condemned-coal conveyor. All the undersized coal from the lip screens is also taken by this conveyor to shaker 17 for retreatment.

Although all except the smaller sizes of coal in this breaker are treated dry, comparatively little dust is made. A Carpenter system of exhausting the dust is employed. Every piece of apparatus in the breaker in which large amounts of dust are liable to be formed, such as shaking screens and rolls, is inclosed and the dust is drawn out and collected in a settling tower by means of water or exhaust steam. It is surprising to note the clearness of the air that comes from the suction fan. What little dust rises in this breaker comes chiefly from the pickers and it would be possible to inclose these, so that even this dust could be removed by suction. In the winter less dust is perceptible than during the summer, as at this season the windows in the breaker are closed and the exhaust fan not only sucks air from the inclosed places but also from the breaker building itself.

Great care is taken to place safeguards around the machinery installed in this breaker. Every belt and moving element is carefully guarded so as to lessen the

danger of a man being caught. All walkways and stairways that are even slightly dark are lighted by electricity and provided with guard rails to prevent anyone from stepping or falling sideways.

From the pockets the coal is loaded into railroad cars by means of specially-constructed chutes that lower it to the bottom of the car with the least possible drop.

This breaker does not require any more men for its operation than do many of the wet breakers. In fact it requires a smaller force than many of the jiggling plants. In this building there are only two places where hand picking is performed, namely, at the head of the breaker where there is a picking table for the lump coal, and at the foot of the spiral pickers that clean the coal from the two Mowry shakers. This compares favorably with the requirements of a wet breaker, where men are employed to remove the rock at the head of the breaker and also to hand-pick the coal and rock coming from the egg and sometimes from the stove jigs, and in a few cases also to hand-pick the chestnut.

In this building fifty-four anthracite spiral pickers are employed, as well as nineteen Emery pickers and two Mowry shakers. Three sets of shaker screens, two sets of rolls and two rock crushers also form part of the installation.

### Shoot Mine Superintendent and Prosecuting Attorney in Mingo County

UNIDENTIFIED persons shot John Yates, superintendent of the Gates mine of the Crystal Block Mining Co., on Oct. 23 while he was walking along the Mingo County road near the company store at Gates, ten miles east of Williamson, W. Va. The next day S. U. G. Rhodes, a former prosecuting attorney of Mingo County, who had incurred the enmity of the mine workers, was dragged from his mule at Devon, W. Va., and shot in the face with a rifle after addressing a political meeting at Beech Creek, near Devon. Federal troops are actively seeking the perpetrators of these acts of violence.



# Tests Show That Buildings May Be Rendered Fireproof with Gunitite

When Properly Constructed a Gunitite Wall Will Withstand Heat as Efficiently as a Wall of Brick—Gunitite Has the Further Advantage of Being Weather- and Damp-Proof—It May Be Used as a Coating or as a Structural Material

BY B. C. COLLIER  
Allentown, Pa.

ONE of the most interesting materials being utilized in the effort to reduce fire hazards is "gunitite," which is sand and cement mortar placed by the "cement gun." In the early stages of the development of this material tests were made upon its fire-resisting qualities by constructing small houses

Anaconda Copper Mining Co. made before it decided to use this material as a means of fireproofing all its shaft and entry timbers. These tests, described in a paper published by E. M. Morris in the Bulletin of the American Institute of Mining Engineers, consisted in covering timbers with a 1-in. coating or reinforced gunitite,

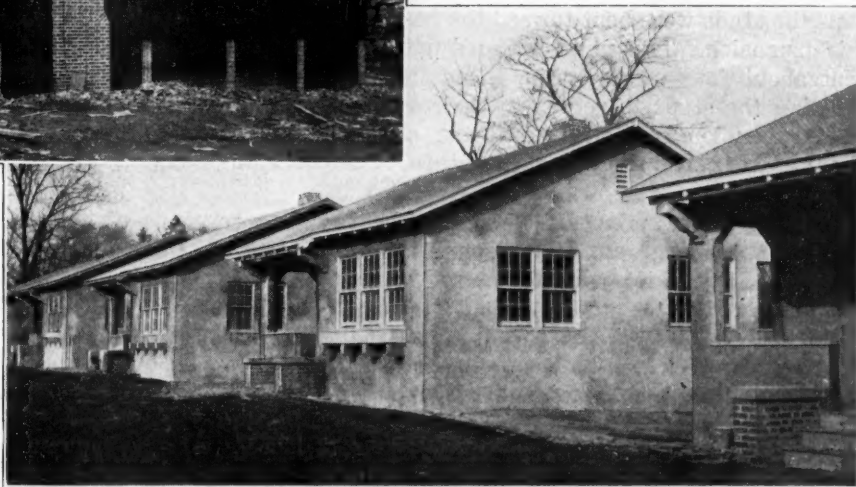


## House Ready to Gunitite

Building is shrouded in tar paper and covered with reinforcing mesh and stands ready for the "man behind the gun," who in a short time will cover it with the most durable of paints—cement mortar.

## Row of Gunitied Houses

Nothing makes frame buildings more substantial than a coating of gunitite and nothing renders the walls of those buildings more resistant to exterior fire hazards, or to all fire hazards if they are similarly treated internally.



with 2 x 4 in. studs, over which, inside and out, a layer of tar paper and reinforcing mesh was placed on which was shot an inch of gunitite.

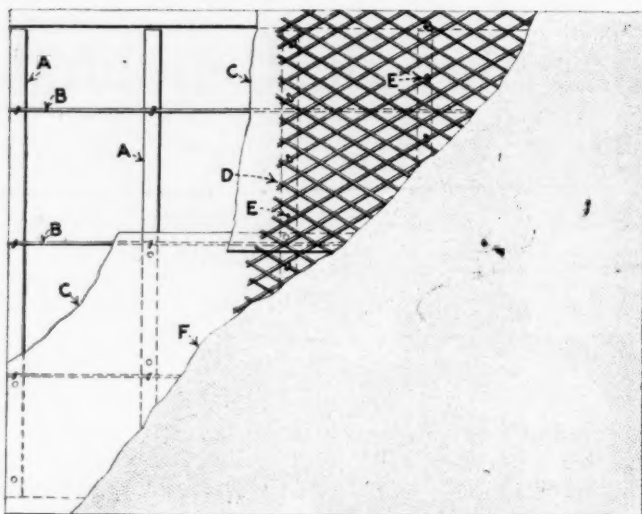
## TEST TO DETERMINE VALUE FOR MINE WORK

These houses were then filled with highly inflammable material, which was ignited, and, while they were still hot, water was turned on them. This resulted in only slight spalling of the gunitite. In one of these cases the studs were left exposed on one side, the outer coat of gunitite being omitted. This was for the purpose of ascertaining whether the studs would become charred. The heat was so intense that the tar in the paper was melted on the back of the inner slab, but no charring of the studs occurred.

The next most conspicuous illustration of the fireproofing qualities of gunitite was the test which the

and placing them in a bonfire. Here the coating was brought to a red heat and kept at that temperature for one-half hour. The fire was then allowed to die down, and the samples were examined to discover the amount of charring. None was noted except a slight amount on the corners, where the gunitite was cracked. This test led to a rapidly extended use of gunitite as a protection against fire.

As a proof of the serviceability of gunitite as a fire protection, tests have been made during the current year at the Underwriters Laboratory in Chicago. The first tests were made during the meeting of the Concrete Institute in February and were witnessed by many of the prominent engineers and building commissioners present at that gathering. Reinforced slabs 1 in. thick shot over tar paper attached to 2 x 4-in. studs were made the fourth wall of a gas furnace. The heat



#### RECOMMENDED FORM OF GUNITE CONSTRUCTION

A frame of 2 x 4-in. studding (A) set on 16-in. centers over which is stretched No. 9 black-iron wire (B) spaced on 15-in. centers and firmly stapled to studs, the whole covered with three-ply tarred felt 32 in. wide, (C) nailed to the studs over the wire. Expanded metal 1½ x 3½ in. mesh, No. 16 gage (D) or its equivalent spread over the tarred felt and attached to the studding by a special wire chair with eight-penny nails which hold the reinforcing ½ in. from the felt. Gunite (F) on the outside of the above, 1-in. thick containing one part cement to three parts sand.

attained after five minutes was 500 deg., and in the next thirty minutes it increased gradually to 1,500 deg. It continued to grow hotter at a rate which would bring it to about 1,700 deg. in one hour.

The first slab tested began to show marked indications of expansion in about five minutes, and as the reinforcing mesh had been attached to the studs with heavy nails the studs were bent toward the heat by the pull of this expansion. This pull continued until the studs had bent about four inches, when the nails were released, allowing the studs to return to their original position. This expansion continued until the slab, which was about 8 x 12 ft., showed a curvature of about eight inches.

At forty-three minutes, when the heat was over 1,500 deg., the gases escaping through the joint between the panel and the inclosing frame set fire to the timber cap piece at the top of the slab. It consequently was decided to withdraw the slab, and expose it to the effect of a stream of water under 30 lb. pressure for three minutes. This was done with absolutely no sign of spalling or breaking down of the slab.

#### USED FOR CONSTRUCTION, NOT AS MERE COATING

Gunite has been used for some years in the construction of the walls of industrial buildings, as well as to form the covering of the walls of cottages where timbers were used as the framework. It has thus been shown that not only is such a covering weatherproof but that it is a definite means for providing a permanent and fire-resisting wall. A demand still existed, however, for a type of construction that would be absolutely fireproof through the elimination of all timber framing. Consequently there has been developed a type of cottage construction, recently described in several of the technical journals, wherein the walls, supporting columns and floor-carrying girders are shot monolithically. This produces a structure that is better and cheaper than brick and which is absolutely fire- and weather-proof so far as the outer walls are concerned. The forms against which these walls are shot are built up of light framing

covered with tar paper. They are left in place, so that the framing members act as the furring strips for the attachment of the interior lath and plaster.

A further development of this principle has been made by Messrs. Ballinger and Perrot, architects, of Philadelphia, during the last few months for the construction of exterior walls and fire partition walls in a large lumber-storage warehouse belonging to the Victor Talking Machine Co., at Camden, N. J. The outer walls have been constructed in a highly ingenious manner by building up at about 4 ft. centers, three-sided hollow boxes of 1 x 6-in. plank, which act not only as temporary supports for the roof members but also as forms for the construction of the reinforced gunite columns. Between these boxes temporary wooden panels are erected, and the wall of the reinforced gunite 1½ in. thick between these supporting columns is then built in place.

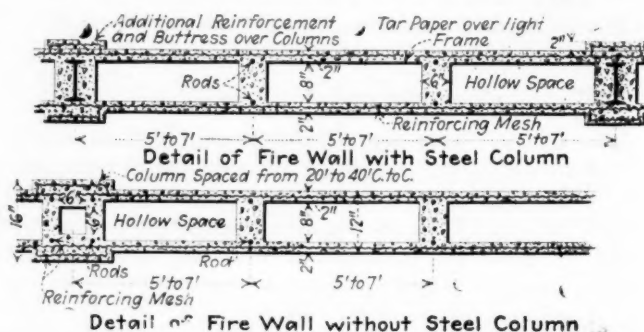
#### FASTEN REINFORCING FIRMLY TO OUTER STUDS

The fire partition walls used in this warehouse are the result of a further development of this general principle, and samples have been subjected to a remarkable test at the Underwriters Laboratory. The investigation of the first test above described led to the conclusion that, because of the expansion, it was necessary to provide a slab measuring from 4 ft. to 7 ft. between supports, and consequently it is now recommended that on wooden-frame houses the reinforcing mesh shall be firmly fastened at the corners, top, bottom and around windows, but shall be only lightly fastened at the intermediate studs.

#### GUNITE IS USED AS FOURTH WALL OF FURNACE

The wall construction tested in June and used in the building above referred to is built by setting up forms consisting of light frames covered with tar paper, so spaced that a recess of 6 in. is left between adjacent panels. In this recess are set up two reinforcing rods tied together, to which the reinforcing mesh is fastened on both sides of the panel. In the particular wall tested these forms were eight inches between their side faces, and over each side was shot two inches of gunite. This creates a cellular wall consisting of two 2-in. outer walls and an 8-in. air space between them with 6 x 8-in. columns spaced on about 7 ft. centers.

Two samples of such a wall were tested in the Underwriters Laboratory by building up panels to form the fourth wall of a furnace. These panels consisted of two column members with their connecting walls, and additional walls extending eighteen inches beyond the



#### HORIZONTAL AND VERTICAL WALL SECTIONS TESTED AT UNDERWRITERS LABORATORY

A wall like this was made the fourth wall of a furnace and after curing 40 days, was subjected to a hot fire for four hours with the results described in the article.

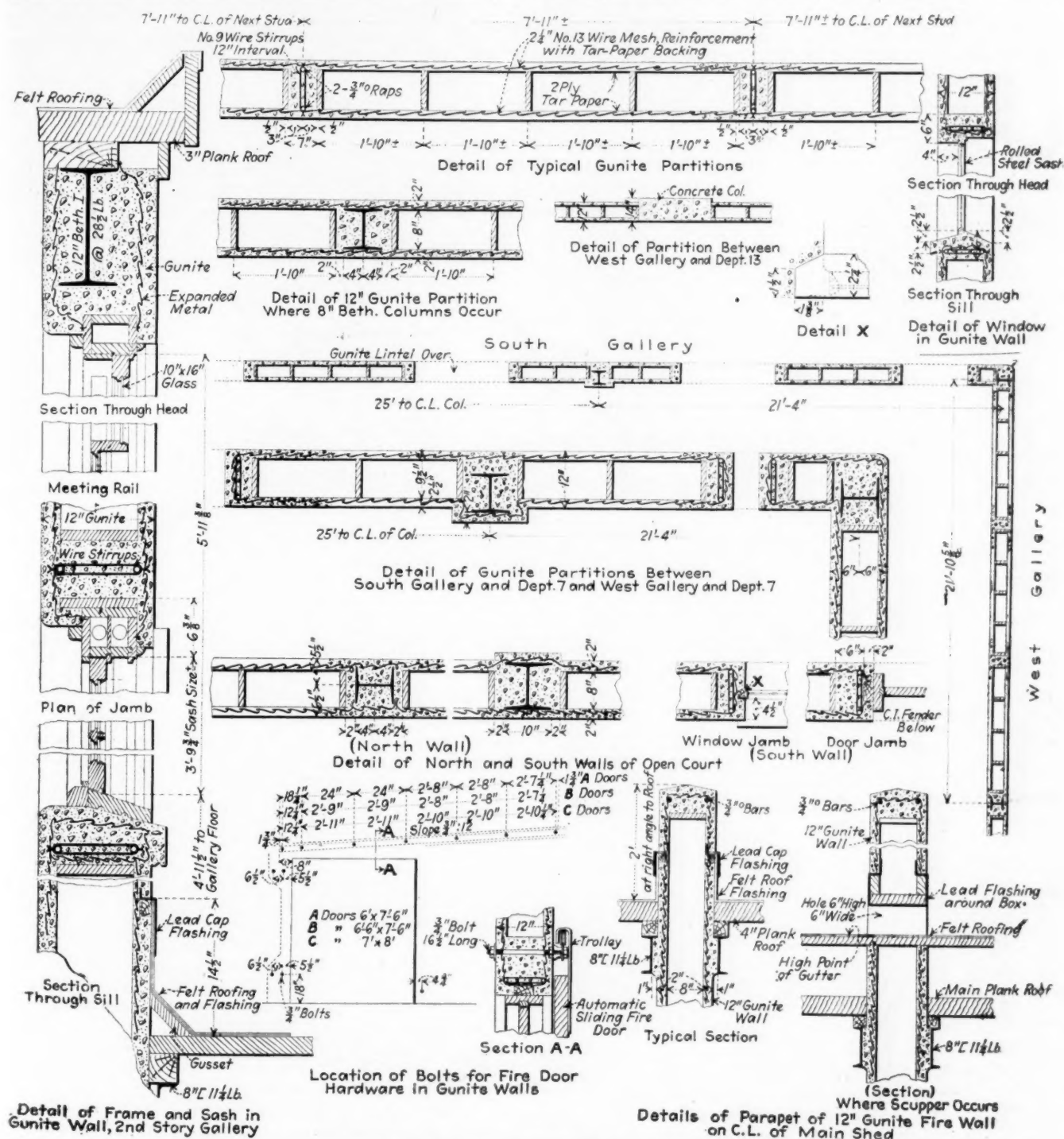


columns to meet the framework of the support. After curing for about forty days they were tested with the full fire load specified by the Committee of the Concrete Institute—that is, a heat of 900 deg. in five minutes, rising to 1,600 deg. in one hour, and continuing on to about 2,100 deg. in four hours.

The first sample was kept under this heat for four hours and fifteen minutes, and although expansion caused the breaking of a hole in one of the short connections between the studs and the frame no damage was done to the portion between the studs, which was the real test, and no fire got beyond the outer wall of the portion where the hole had broken through. The specifications for such a test call for a wall that will

show not more than 300 deg. on that face of the gunite which is away from the fire. Out of five thermometers, only one showed this temperature after about four hours and ten minutes, and hence the test was stopped five minutes later, as the specifications call for only four hours and the engineers desired to hold the sample for a further breaking-down test.

A second sample built up in the same manner was tested for one hour on the following day (June 4) and then withdrawn and subjected immediately to a stream of water at 50 lb. pressure for five minutes. A hole similar in appearance and at the same location had broken through the fire face as a result of the same expansive action on the short span, but no damage



## USE OF GUNITE IN CONSTRUCTION OF LARGE BUILDINGS

The wood here is merely the form on which the gunite is shot. The strength is in the gunite and not in the wood. Consequently, the quantity of lumber used is small, and the amount which could be exposed is inconsiderable, even if the gunite should collapse under such a load, as has been shown, is entirely unlikely. The drawing shows how the fire doors may be hung.

occurred to the main tested portion between studs (or columns).

Both of these trials were witnessed by a number of engineers well versed in such tests, and it was said that no material other than a brick wall thirteen inches thick had ever withstood such usage. Some of those present pronounced such a wall better than one composed of brick.

These developments have established a method of con-

struction peculiarly advantageous for all kinds of buildings, for not only is it now clearly proven that this type of wall is easily adaptable, but a wall is provided that is much more quickly and economically constructed than is one composed of brick. It is lighter, is positively insulated against heat and cold and is absolutely damp-proof. Furthermore, it is, as has been shown by tests described, fully equivalent to a brick wall as a fireproofing medium.

## Coal Mining Institute Will Meet Early in December

Only Six Technical Papers—A Session of Practical Questions and Still More Practical Answers—Six Different Presiding Officers—Trip on Third Day

**I**N THESE days the Coal Mining Institute of America needs a big hall and procures it—the Pittsburgh Chamber of Commerce Auditorium. The hall, by the way, has comfortable seats which do not strain the back like the fancy gold chairs of earlier days which were built for “looks” and not for comfort. The meeting will open on Wednesday, Dec. 8, at 9:30 a.m., with reports of officers and committees, election of new members and election of officers.

Then Dr. George H. Ashley, state geologist, of Harrisburg, Pa., is to deliver a paper on “The Geology of Oil and Gas.” Thereafter two questions will be presented: (1) To what extent is the storage of coal at the mine economically justified? (2) To what extent is purchased electric power cheaper or dearer than plant-produced power based on statistics of cost of production extending over not less than one year? W. E. Fohl will preside.

In the afternoon, commencing at 2 o'clock, Dr. E. S. Moore, of State College, Pa., will preside and present three questions: (3) What is the best means of educating the miner and proving to him that his lot is not so bad after all? (4) Are accidents per ton of coal mined being reduced in proportion to the energy and money expended for safety work? (5) What is the range of temperature in a coal mine? The session will conclude with a paper by E. E. Bach, director of the Americanization Bureau, Department of Labor and Industry, Harrisburg, Pa., entitled “What Has Been Accomplished in Americanization Work in Our Pennsylvania Mining Communities During 1920.”

On the evening of the first day is the annual dinner of the institute at the William Penn Hotel with the genial William L. Affelder in the chair. *Coal Age* will be represented by Jack Armor; the Safety Institute of America by Dr. Riley F. Little, of New York City; the Presbyterian Board of Home Missions by the Rev. John McDowell; the mines by Carl Scholz, Charleston, W. Va., and Howard I. Smith of Sullivan, Ind.; the *Saturday Evening Post* by Floyd W. Parsons, now its industrial editor and formerly editor of *Coal Age*; the Bureau of Mines by its director, Dr. F. G. Cottrell.

The sessions will open on the second day with John I. Pratt, state mine inspector, holding the gavel. The questions to be asked by him are: (6) What are the merits and demerits of modern coal-cutting machines? and (7) What is the consensus of opinion of those present as to the standardization of all coal-mining equipment?

William G. Duncan, director of extension work for the School of Mines, Pennsylvania State College, then will read a paper on “Modern Safety Appliances for Hoisting Shafts and Cages.” Thomas Chester, manager of the American Blower Co., will read a paper entitled “Some Data on Mine Fans.”

In the afternoon F. W. Cunningham, state mine inspector, will present a single question: (8) Should “booster” fans be allowed in coal mines? Then Dr. Rheinhardt Thiessen, chemist of the U. S. Bureau of Mines, will give a paper on “New Developments in the Microscopic Study of Coals.” This will be illustrated with slides.

F. W. Cunningham will then step down and give William J. Affelder place, who will present two questions: (9) Is the so-called “thick Freeport coal” a combination of the upper and lower Freeport beds, or an abnormal development of the upper Freeport? (10) What are the different forms of sulphur in coal and why are some less objectionable than others? The session will wind up with an article on “Some Peculiar Roof Conditions Found in the Central Pennsylvania Field,” by Superintendent Alfred E. Roberts of the Monroe Coal Mining Co., of Ebensburg, Pa.

On Friday, the third and last day, the members will make a valiant effort to get up early enough to visit the byproduct coke plant of the Jones & Laughlin Steel Co. at 9 a.m.

**ALABAMA MINE-PROP LAW.**—Under the section of the Alabama mining statutes requiring coal mine operators to keep on hand a sufficient supply of props, etc., for use of those working in the mine, the duty to designate the props or timbers desired or to give notice of the number and kind needed, and of the place at which they are to be delivered, devolves upon the miner himself. He must make the required designation before any duty to furnish the props, etc., is imposed upon the operators. (*Alabama Supreme Court, Kelly vs. Altoona Coal Co.*, 83 *Southern Reporter*, 62.)

A CHANGE IN THE method of handling applications for shipments of emergency coal to Canadian public utilities has been announced by the Board of Railway Commissioners through their fuel control representative. Where a critical condition may arise special application forms for securing coal stocks may be secured from the fuel administrator for the province, who will make the necessary recommendation to the railway board. If the application is approved representations will be made to a special committee at Washington just appointed by the United States.

**IN THE CASE** of the Illinois Steel Co. vs. the Joliet & Eastern R.R. a tentative report of an I. C. C. examiner recommends that the rate of \$5 per car plus 15c. per ton for coke from ovens to the complainant's plant at Gary, Ind., from June 25, 1918, to Sept. 22, 1918, was not unreasonable, and that the claim for reparation be denied.



# Give the Fireboss a Fair Chance and You Will Get a Far Safer Mine\*

**Pay of Fireboss Usually Below Pay of Contract Miners—Inadequate Time to Perform Safety Duties and Insufficient Authority Make It Impossible for Him to Assure the Company by Which He Is Employed That the Mines Will Be Reasonably Free from Accident**

BY D. HARRINGTON†

**T**HOUGH the fireboss in coal mines and the shiftboss in metal mines are alike held responsible for the safety of the underground employees and the security of the mine, they are, it seems to me, not always vested with sufficient authority nor given compensation commensurate with their duties. The metal-mine shiftboss, although his position between the employer on the one hand and the employee on the other frequently makes his work an unenviable one, has as a rule much more authority than the fireboss and is not expected to perform the menial tasks which many coal-mining companies require of the latter.

In most coal-mining states the coal-mine foreman and the fireboss are required to possess a certificate of competency granted only after the passing of an examination. The foreman is legally responsible for the safety of the miners, for the superintendent is rarely required to pass an examination. Although in the eyes of the law the foreman is responsible for the safety of the miners, mine legislation does not, in general, compel the superintendent or other higher officials to delegate sufficient authority to the foreman to enable him to put his wishes or judgment into effect; and this condition has tended in many instances toward perpetuation of unsafe conditions.

The fireboss is held legally responsible for conditions in his "beat," but he is generally given only such authority as the mine foreman sees fit to delegate, and this is frequently but little. Moreover, the fireboss is generally required to cover his "beat" within the two hours that precede the entrance of the workers into the mine. Only too often his territory is so great that in order to reach all the working faces and chalk the required date at the face, he must travel at a rapid walk or even run. When such haste is necessary to cover the required ground, it is manifestly impossible for the fireboss to make a careful inspection or examination of the roof, timbering, wiring, gas, etc., at each place, and doubtless in his hurry many unsafe conditions escape his notice.

After he has completed his morning rounds, recorded the state of the mine in the book provided at the

office for that purpose and has eaten breakfast the fireboss is usually required to return to the mine to spend several hours in building or repairing brattices, doors, stoppings or some similar duty—in other words, to perform work which any skillful laborer could do. If dangerous conditions were encountered during the inspection the fireboss is expected to correct them immediately, or if this is not feasible, he should return to the mine and correct them as soon as possible after making his morning's report.

The shiftboss usually has twenty-five to fifty men for whose safety he is responsible, but the fireboss at a coal mine has frequently several times that number; the

shiftboss has practically unlimited time in which to make his rounds, but the fireboss must complete his morning inspection within about two hours. The shiftboss usually is delegated almost full power to enforce his wishes, but the fireboss frequently has no authority other than to make recommendations to the foreman.

In many coal mines the fireboss is paid by the day, like an ordinary mine laborer, or he receives a stipulated monthly salary, but deductions are made for days of absence from duty. This practically puts him, regardless of his monthly salary, on a basis of daily pay. Yet the fireboss receives in many mines a remuneration below that given common labor, and certainly far below that received by contract miners. Also, whenever the general wage scale is increased, only too frequently the fireboss, in common with other so-called salaried men, continues on the former schedule, although this may be, even at that time, low compared with that which other workers receive.

## SHIFTBOSSSES OFTEN HAVE TECHNICAL TRAINING

The shiftboss at a metal mine is fairly well paid as compared with other mine employees, and works the same hours; he has generally the power of discharging undesirables, is in direct contact with actual operations, and the experience thus gained qualifies him for higher positions. The fireboss, on the other hand, with practically no authority other than recommendatory, with practical exclusion from actual operations, generally with inadequate pay, abnormal working hours, and heavy responsibility as to both lives and property, certainly is not in an enviable position. His work

**Firebosses should be men of technical ability and training, routed for executive positions. Shiftbosses at metal mines are often of that type. Too much actual labor is required of firebosses. They should be safety inspectors with an authority equal to the reliance that is placed on their work.**

\*Paper read at the meeting of the Rocky Mountain Coal Mining Institute, Denver, Col., Sept. 9-11, entitled "Duties, Trials and Difficulties of the Coal-Mine Fireboss and Co-operation of Officials with Him."

†Mining engineer, U. S. Bureau of Mines.

entails greater personal danger and greater responsibility than does that of the shiftboss, and it should call for a higher degree of education and intelligence than the latter position.

Nevertheless it is extremely noticeable that whereas a large proportion of shiftbosses in metal mines have had technical training, the proportion of technically trained firebosses is negligible. In fact after more than twenty years' experience in and around coal mines in seventeen states, I have yet to see a man with technical training serving as fireboss or, except for a few instances, as foreman of a coal mine. This condition is inherently wrong. Surely the men on whom the safety of all of the lives within a mine almost directly depends should be selected from among those who have had the best opportunity to become thoroughly familiar with the underlying conditions or combinations of conditions that may result in disaster.

During the last five years I have had occasion to investigate carefully sixteen coal-mine fires and explosions in seven states. In ten of the sixteen cases I could only classify the underlying cause as faulty inspection of the fireboss or other employee who performed this duty, in three instances as direct violations of the law, in one case as gross carelessness, and in two cases as unavoidable accidents. In at least five of the ten disasters caused by faulty inspection the employee who was examining the mine was himself the cause of the trouble and in four instances lost his life; in one case in which the law was broken it was by an inspector who similarly made payment for his indiscretion. From this it would appear that present methods of daily coal-mine inspection are faulty, and, in my opinion, the chief fault lies in the giving of an inadequate status to the fireboss in the organization of the mine.

#### MINE OFFICIALS INADEQUATELY INFORMED

The fireboss ostensibly is required to pass an examination preparatory to obtaining a certificate of competency, but in many instances the certificate is granted practically without examination, and only too often the examinations are a farce. Frequently the applicants are poorly-educated men, who have "crammed up" on a few facts (real or alleged) on gases, air flow, etc., and have only a vague idea as to the actual meaning of these facts. As a rule, such men, even if they pass the examination fairly well, will forget practically every detail within a month.

Many firebosses and mine foremen are wholly at sea as to important facts directly affecting mine safety; for instance, some of them know nothing of the properties of methane other than that it gives a "cap" in a safety lamp, with practically no idea as to the significance of various heights of cap; and would find it a hopeless puzzle to obtain with an anemometer and a tape line the volume of air flowing through an entry.

A still more serious matter is that many firebosses and coal-mine foremen are almost wholly unfamiliar with the state laws regulating the safe operation of coal mines. In several of the disasters I have attended it was definitely established that the disaster resulted directly from the lack of even elementary knowledge exhibited by the fireboss, foreman or local inspector as to the properties of mine gases or as to the state laws governing the operation of coal mines.

In my opinion no man should be permitted to qualify as fireboss until he has had at least five years' exper-

ience in underground work and has passed an examination requiring a thorough practical knowledge of mine gases, dusts, electrical equipment with especial respect to its dangers and also many details in regard to modern ventilation practice and approved safety methods. At the mine he should be required to act as safety engineer, as well as fireboss, and while held responsible for removal of gas, for keeping flow of air free and continuous, and for general inspection of shot-firing, etc., he should not be required to do such manual work as hanging doors, building brattices, loading holes, etc.

#### SHOULD HAVE ALMOST SAME SALARY AS FOREMAN

His compensation should be on a basis similar to that of the foreman and it should be only slightly less than that paid to that functionary, and certainly should equal the day wage that is at present paid to ordinary miners. Both foreman and mine superintendent should qualify, and should act, as fireboss before being promoted to their positions. The superintendent and his mine foreman, as well as the fireboss, should be required by law to take a rigid examination at intervals not exceeding five years, with a special view to compelling them to keep in touch with the state laws and to changes in the law, and to keep informed as to the latest progress in general matters of mine safety, especially as regards gases, dusts, air control, etc.

In gaseous mines the area each fireboss is required to patrol should be such that he may cover his morning "beat" and still have sufficient time to devote at least a few minutes to actual inspection at each working face. He should be given state authority and state protection to close any place or places deemed unsafe, even should the mine management object; this is drastic, yet the fireboss, not the mine superintendent or manager, is held responsible if a disaster occurs after conditions are known and not remedied.

The foregoing recommendations may appear radical to some, but my personal experience at coal-mine disasters convinces me that unless sweeping changes are made in the methods of daily mine inspection we cannot expect to make the progress we would toward a reduction in the frequency of mine fires, explosions, and accidents.

#### Foreign Mine Labor Getting Scarcer

IMMIGRATION figures for the fiscal year ended June 30 show that the trend toward America is again gathering force, but that up to date the mines have not benefited. During the fiscal year 430,001 aliens were admitted and 288,315 departed, leaving a net increase of 141,686.

Of the aliens arriving in this country 3,081 became miners and of those departing 5,279 were miners, a net loss to the mines of 2,198.

The situation, so far as Pennsylvania is concerned, is not exactly satisfactory. That state, once a favorite destination for immigrants, is one of the few important states which show losses in the immigration statistics. During the fiscal year the state received 27,637 newcomers, but emigration totaled 44,156, leaving a net loss of 16,519.

THE SCALE COMMITTEE of the United Mine Workers of District 16, embracing the Georges Creek region and the Upper Potomac field, began a series of meetings on Oct. 19 at the special call of Frank J. Drum, district president. The meetings were called for the purpose of considering matters relating to a rearrangement of the scale in District 16. A survey of wages and other conditions has recently been made by John P. White, formerly president of the United Mine Workers, who submitted a report as to his findings.



# Rules for Prevention of Gas Explosions\*

Degree of Immunity from Gas Explosions Depends on Fidelity with Which Two Simple Rules Are Followed—Hit-or-Miss Ventilation Is Dangerous, as Is Also Either an Inadequate or Superfluous Flow of Air—Ventilation Engineers Should Prepare Specifications for Fans

BY R. A. WALTER†  
Benham, Ky.

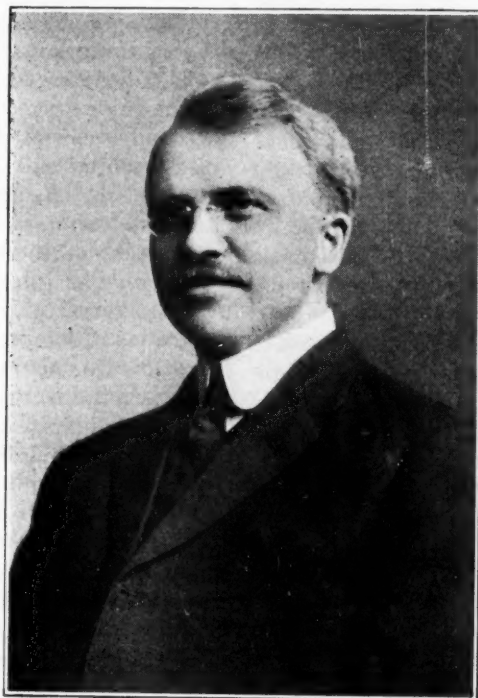
**T**HIS article is an endeavor to condense into a few readily understandable rules the results of many years of experience gained in bituminous coal mines, which prior to the adoption of the methods herein outlined had a continual tendency to blow up upon the slightest provocation.

Throughout this article when the word "gas" is used it should be interpreted as meaning the mixture of air, methane and accompanying gases commonly known as firedamp. Other explosive gases and mixtures exist, of course, but usually as the outcome of an explosion or mine fire. Their presence can be detected readily by the experienced observer, who must decide what precautionary measures will have to be taken in this instance, which are not necessary when only methane has to be controlled.

Coal dust in suspension may make it possible to ignite a mixture of air with only one per cent of gas. As the ignition point is above 5 per cent when no coal dust is present, the importance of humidification to keep down the dust becomes readily apparent. Gassy mines are frequently dry and dusty and the most elaborate system of gas control will not make such operations explosion-proof unless the dust is rendered harmless by sprinkling or other appropriate treatment.

Gas explosions in bituminous coal mines can be prevented by the observance of two rules: First, ventilation; provide such ventilating current under proper control as will dilute all explosive gases to a harmless mixture and carry them away. Second, precautionary measures; keep from dangerously gas-laden mine air all flames and such sparks as are sufficiently hot and sustained to cause ignition. Only by faithful observance of these two rules can gas explosions be entirely prevented. Immunity from such disasters varies in direct proportion to the fidelity with which they are observed. Close adherence to the following details is important.

**Ventilation:** For every man, 150 cu.ft. of air per minute must be delivered at the working face and 500 cu.ft. must be provided for every mule, with such fur-



A successful engineer-manager. For many years he was chief mining engineer of the Consolidation Coal Co. in the Georges Creek field. As mine owner and manager he has been an advocate of thoroughness, believing the householder is not safe as long as one window or one door is left unfastened. Nearly safe is unsafe.

ther volume as may be necessary to dilute to 0.5 per cent the gas content in individual splits and to 0.33 per cent the gas content in the entire return from the mine. A fan must be selected that will deliver air to meet the above requirements after due allowance has been made for leakage and friction. The fan wheel must be substantially constructed and well balanced. Bearings and drives must be so designed as to permit continuous operation.

The fan should have two separate drives, preferably from entirely different sources of power. Clutches should be located outside the fan chamber. They should be so arranged that not over five minutes will be required to make the change from one drive to the other. The fan should normally exhaust air from the mine, but it must be reversible. Fan housing and fan house must be of fireproof construction and explosion doors must be provided. The fan must

be equipped with an accurate continuous recording pressure gage and with an automatic low-pressure alarm signal. Too much importance cannot be attached to proper proportioning of air courses and the construction of overcasts, stoppings, regulators, brattices and doors. Air splits should be proportioned with due regard to the quantity of gas transpired, the number of men in the workings, the air velocity and the location of old workings.

If the operation is a shaft mine, the entire shaft, or all the shafts, should be concrete lined, but should this not be feasible, at least the air compartment must be lined with concrete from top to bottom.

## STOPPING MATERIAL SHOULD HOLD UP SLATE

Air courses must be of such size and number as to reduce to a minimum, commensurate with cost of driving, the friction of the ventilating current. Local conditions vary too much to give any formulae that will cover all cases, but in every instance this problem can be reduced to simple figures and solved. In old mines this may become difficult, but even then a careful study and calculation of air-course construction versus power costs generally results not only in better ventilation but in an appreciable reduction in the cost of operation.

\*Paper, entitled "General Rules for Gas Explosion Prevention," read before the Ninth Annual Safety Congress of the National Safety Council, Milwaukee, Wis. Sept. 27, 1920.

†Superintendent, Wisconsin Steel Co., Benham, Ky.

Overcasts should be constructed of fireproof material and of standard design. They must be so built as to narrow neither haulway nor airway.

On all headings only the innermost crosscut should be left open; all others should be closed with airtight stoppings constructed of fireproof material. These stoppings should be strong enough to support the draw slate; otherwise it might subside and permit the air to leak in important quantity through crevices thus formed. These crevices, once open, cannot be closed except at prohibitive cost.

Regulators should be constructed of fireproof material. They may be of the sliding or door type, but in any case they should be so constructed that they can be locked to any desired opening. Brattices should be built from all inside working crosscuts to within 15 ft. of the working face, or nearer if this fails to sweep out the gas. Only closely-woven brattice cloth of strong texture should be used for this purpose. It should be supported at the top and bottom with wooden strips.

Doors must have attendants or be of the automatic type. They should be arranged in pairs, with room between them for a full trip of cars.

Splits from the main ventilating current must be so proportioned that each individual return shall contain not more than 0.5 per cent of gas, and so far as possible that the maximum and minimum velocities will not exceed 500 or be less than 125 ft. per minute. Not more than seventy men should be permitted to work on any one split.

#### USE RETURN AIR TO VENTILATE OLD WORKINGS

It is desirable to so arrange the splits that old workings may be ventilated with return air, rendering unnecessary the diversion of fresh air for this purpose.

Abandoned and worked-out sections should be sealed off with heavy fireproof airtight stoppings provided with bleeders opening to return air. Frequent analyses and measurement of the gases escaping from these bleeders will determine the extent to which the sealing-off operations should be carried. Should a large quantity of explosive gas accumulate it must on no account be turned out onto men in working sections of the mine. Should gas accumulate in large quantities under pressure, boreholes should be driven from the surface into an open space in the sealed-off section.

In the event of total stoppage of the fan for an interval sufficiently protracted to permit dangerous accumulations of gas, open all switches to inside power lines. Upon resumption of ventilation every working face must be tested by the firebosses before the power may be again turned on in the mine.

#### FIREBOSS SHOULD DO HIS OWN BRATTICING

A sufficient number of skilled firebosses must be provided so that all of them can cover in two hours the territory assigned to them. After making his run each will make his report to the mine foreman, check every man into his section, return to it and utilize the remainder of the shift in hanging brattice cloth and performing such other work as may be necessary to maintain ventilation. This definitely fixes responsibility and invariably results in better work than can be attained where the fireboss merely tests his section and does not supervise the work necessary to assure ventilation.

The fireboss shall mark out, with a board bearing the

word "Gas" in large letters, all places in which gas has accumulated in dangerous quantities, and shall make note of them in his report to the mine foreman. These boards shall be removed by the fireboss only, and then not until after the gas has been removed.

#### GIVE FIREBOSS ELECTRIC AND "SAFETY" LAMP

Each fireboss shall be provided with a closed electric cap lamp and with a flame safety lamp which will detect a  $1\frac{1}{2}$  per cent to 2 per cent mixture of gas. Places that show no gas cap with this lamp are safe if no coal dust is in suspension. Should coal dust be present the gas content which may safely be present becomes so low that nothing but a special lamp or detector in the hands of a skilled observer can show its presence. In ordinary hands the extremely sensitive lamp may become a menace and it is not properly a fireboss' instrument. The best results and greatest speed and safety will be attained by using for testing purposes a flat-wick naphtha-burning lamp with double gauze hood, magnetic lock and internal relighting device.

At regular intervals analyses should be made of the air in every return. If any individual split shows gas in excess of 0.5 per cent, analyses should be made daily. If below this amount once a week will be sufficient. For approximate work a Burrell gas detector is satisfactory. For more precise results the Haldane type of apparatus is preferred. Both should be part of the equipment of every gaseous mine. The latter is a laboratory instrument and necessitates the use of containers in which to take samples of the mine air. For this purpose nothing should be used except glass pipettes either of the evacuated type or the variety provided with two stop-cocks.

#### SHOULD KNOW VOLUME OF GAS SPLINT GENERATES

When gas readings or samples are taken, simultaneous observations should be made of volume and humidity, using a properly calibrated anemometer and a wet and dry bulb thermometer in a sling mounting. From these data can be calculated the total amount of gas transpired, its point of origin, and the amount of moisture carried in and out of the mine by the ventilating current, all of which information is essential to efficient control of gas and ventilation. It should be compiled in tabular form for ready reference.

A recording barometer should be installed at the mine, and comparison made between the barometric chart and the tabulated gas readings. A correspondence will be noted between the two which will be an invaluable guide in regulating fan speed and indicating when special precautions should be taken.

*Precautionary Measures.*—Only permissible explosives shall be used and no holes shall be loaded with more than 1.5 lb. of powder. All shots shall be fired with electric detonators and battery and shall be loaded, tamped and fired by men instructed and skilled in such work. All shooting shall be done when none but shot-firers are in the mine. All shotfiring systems require constant vigilance and the most careful supervision or they may become sources of real danger. Use sand or clay for stemming and tamp all holes full to the collar. No coal dust ought to be left in the hole, nor ought any hole to be shot on the solid.

No open lamps shall be permitted in a gaseous mine. Electric cap lamps are recommended in preference to the flame safety lamp. Shift leaders, machine runners,



shotfirers and all inside officials will carry in addition a locked, flame safety lamp of the type that is standard at the mine.

No machinery driven by internal combustion engines shall be permitted inside the mine. No fires shall be allowed below ground. Smoking is prohibited and matches shall not be carried. No electric locomotives shall be operated in return air. Electric or air locomotives may be used in the intake, but air locomotives or mules only may be used on the return.

All switches, fuses and electrical machinery on return air must be inclosed and made explosion-proof. Mining machines and controllers must be of approved explosion-proof type. Machine men while cutting must make tests for gas every thirty minutes.

#### GOOD VENTILATION PAYS SPEEDY DIVIDENDS

After a perusal of these rules the question may well be asked, "Will it pay?" I answer most emphatically, "It will. It will pay not only from a humanitarian standpoint and in protection to property but in lowering operating costs as well."

I have in mind an operation producing half a million tons of coal annually. Twelve thousand dollars expended on two of the main air courses eight years ago would have reduced power costs for fan drive alone 6c. per ton. Rather than spend this \$12,000 the owners have for eight years thrown away \$30,000 annually in forcing the ventilating current through inadequate air courses.

Another operation prides itself on erring on the side of safety. Some of its air courses are unnecessarily large and expensive. Twice the requisite amount of air is being delivered at many of the working faces. The available data are insufficient for precise figures, but I conservatively estimate that amortization of excess capital tied up in ventilating accessories, plus excess power costs, adds 8c. per ton to operating expense.

The first of these operations is merely "getting by." Men are frequently being burned by gas in the working faces. Many places are marked out for gas daily. A serious explosion may occur at any time.

Strange to say, the second operation is no more safe than the first. Face velocities are too high. During the winter months it is almost a physical impossibility to lay the dust by humidification and sprinkling. Much dust is carried in suspension. No shotfiring system is employed and some day a blown-out shot may cause "fireworks." In either case revision of the ventilating system to accord with the foregoing rules would result in increasing the safety factor and in reducing operating costs.

#### PROPER BRATTICES GIVE SAFETY AND ECONOMY

Another instance: A mine producing 1,500 tons of coal per day was using \$60 worth of brattice cloth daily, hanging it from prop to prop with no intermediate supports. The cloth sagged away from the roof; shots tore it down; at least ten places were marked out daily on account of gas. It was decided to support this cloth on wooden strips at both top and bottom. Within a month the consumption of cloth was cut to \$30 per day—a saving of 2c. per ton—and not over two or three places were being marked out on account of gas accumulations, because the brattices when effectively built did not fail to carry the air.

These are not isolated cases. The ventilating systems

of 75 per cent of the bituminous coal mines in this country are susceptible of improvement. All are not such flagrant instances as those quoted; some are far worse.

Parallel instances can be cited as we go down the list of explosion-prevention rules. For example, a special man may be needed to take daily gas, air and humidity readings, but his wages and laboratory expenses can be saved many times over through scaling splits and reducing fan speed and power, as opposed to the common system of supplying excess air in an effort to make the mine safe when there is no knowledge as to the exact requirements.

#### ELECTRIC CAP LAMPS PAY, GAS OR NO GAS

With one exception precautionary measures will show no direct economy in operation. On the contrary, they may involve expensive changes if the present practice is dangerous. Nevertheless all of them are essential to safety.

The exception noted is that of installing electric cap lamps. These should be installed in every mine generating explosive gases, no matter how small the amount given off. It will be discovered after trial that these lamps cost less to maintain than either open lights or flame safety lamps; that the light is satisfactory in every way and that increased efficiency will be obtained from all employees because no time need be wasted in filling or nursing refractory lamps.

In conclusion I would say that gas explosions can positively be prevented. It is probable, however, that they will increase rather than decrease in number unless radical changes are made in ventilating practice. Mine workings are daily advancing under deeper cover and to greater distances from the outcrop, and the old hit-or-miss ventilating system, which, like Topsy, "just grewed," must go.

#### WANTED: A CONSULTING VENTILATING ENGINEER

Take, for instance, an average mining development. Millions are spent to achieve the last word in efficiency of prime movers, haulage and cutting equipment. More millions are invested in tipples, housing, etc., but the ventilating system is selected by guess, and the fan, through lack of definite knowledge, is purchased because of the performance promised by the salesman. This is a most reprehensible practice, the penalty for which is inefficient or unsafe operation and excessive costs for thorough gas control.

The ultimate solution of the problem of efficient gas control will be solved by a new type of mining technician, the ventilating engineer, who will have a thorough knowledge of the chemistry and action of mine gases, of fan design, of the action of the ventilating current under all conditions, of humidification and of the many other items entering into explosion prevention.

Air courses will be designed with as much care as is now bestowed upon the most complicated electrical installation. The fans installed will be selected as to type and will be designed for the service required. The proper amount of humidification will be added to the mine air. Stone dust will be applied just where needed. Splits will be scaled to the correct volume. Gas contents will be determined by analyses, not by estimation, and finally, half the money now spent for ventilation and gas control will be saved and carried over to the profit side of the operator's ledger, where it properly belongs.

# Real Factors Determining Export Trade—I

An Answer to J. D. Davis' "Coal Quality—A Factor in Export Trade"—Author Declares That Coals in Europe and America Have Wider Variations Than Mr. Davis Recognizes

BY F. R. WADLEIGH  
New York City

IN COAL AGE, Sept. 9, J. D. Davis, of the Bureau of Mines, contributed an article, "Coal Quality—A Factor in Export Trade," which contains some statements that I do not regard as quite accurate and which tend to give, in my opinion, wrong impressions, not only of various foreign coals and competitors but also of general conditions pertaining to the export coal trade.

Mr. Davis' article, for instance, contains this statement: [Coals] "in the Central and Appalachian regions are readily available for export." If by the "Central" region is meant that section immediately west of the Appalachian coal area, this statement is misleading. Many coals from this section are neither suitable for export nor are they available, if by the latter term it is meant that their comparative cost is such f.o.b. tidewater that they can advantageously enter the foreign market; nor are *all* of the coals even in the Appalachian region suitable for export, owing to the poor quality of some of the beds that field contains.

Mr. Davis further states that "New River and Pocahontas coals are quite similar to the English Cardiff coal," whereas they are not at all similar to *some* of the "Cardiff" coals and differ in structure and burning qualities from any of them. "Cardiff coal" is, in fact, rather a loose term. Several different kinds of coal are shipped from Cardiff; none is mined there. Coals shipped from that port vary in quality and character, from bituminous to the so-called "dry" steam coals, the volatile contents of which range from 11 per cent to over 30 per cent.

The analyses given of New River and Pocahontas coals do not show the full range of volatile matter, for in some coals from the New River field the volatile content will run as high as 25 per cent, and for this reason the U. S. Navy will not purchase coals from certain mines in this field, although the fuel they produce is quite equal in heating value to that of coals having a lower percentage of volatile matter.

According to the figures given out by permission of the U. S. Bureau of Mines in the Jan. 2, 1919, issue of *Coal Age*, the ash-softening temperatures of Pocahontas coals range from 2,100 deg. F. to 3,070 deg. F., the average being 2,440 deg. F. from No. 3 bed and 2,480 deg. F. from No. 4 bed. For New River coals the figures given range from 2,070 deg. F. to 3,010 deg. F., the average for the three beds being 2,560 deg. F., the Sewell bed coal averaging 2,540 deg. F., the Fire Creek and the Beckley 2,800 deg. F.

In the description of fuel from region 1 in the map accompanying Mr. Davis' article no mention is made of the Kanawha coals, which are now in such great demand for export. Some of them are equal to the best gas and byproduct coals in this country or abroad. Nor is anything said about the excellent steam, gas and coking coals from southwestern Virginia, a district apparently included in region 1.

Some of the figures in Mr. Davis' table of "Limits in Analysis and Ash-Softening Temperatures of Coals from European Production Areas" are decidedly open to question. The maximum heating value given for German Westphalia (Ruhr) coals is entirely too low. I have shipment analyses and tests of coals from this field showing much higher B.t.u. value than the 14,000 given.

English coal (chiefly Cardiff), according to Mr. Davis' analysis, has a maximum ash content of 8.8 per cent and a minimum of 4.5 per cent. If we take all British coals, the minimum ash content should be not over 3.5 per cent and the maximum at least 15 per cent. I have shipment analyses showing ash as low as 3.2 per cent and as high as over 20 per cent.

As to volatile matter, Mr. Davis' article states: "Maximum, 37.8 per cent; minimum, 12.4 per cent." The maximum should be 40 per cent and the minimum 10 per cent, the maximum being the volatile content of some Ayrshire and Yorkshire "house" coals, and the minimum being that of the Welsh "dry" steam coals.

The maximum heating value of English coal given in the table is 14,400 B.t.u. All of the good Welsh, best North Country and the best Scotch steam coals will run higher than this, even as an average, the maximum being around 15,100. There also are some British coals that will run lower in heating value than the 12,150 B.t.u. given as a minimum.

If we take the coals shipped from Cardiff alone, the analyses for actual shipments will range as in Table I.

TABLE I. RANGE OF ANALYSES OF CARDIFF COAL

Moisture		Ash		Volatile		B.t.u.	
Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
2.81	0.88	17.0	3.0	32.0	11.0	15,130	14,050

The minimum ash content of French coals is 11.2 per cent, according to Mr. Davis' table, whereas actual analyses show the minimum to be not over 4 per cent. The maximum volatile, which Mr. Davis states as 35.6 per cent, should be 45 per cent, and the minimum volatile, which he gives as 16.9 per cent, should be 10 per cent.

Region 2, on the map herewith, is credited with producing coal of two classes—steam and gas. To this classification should be added coking coal. The composition and heat value of the steam coals from this region, which would include all the Pennsylvania low-volatile steam coals, is given as in Table II.

TABLE II. COMPOSITION AND HEATING VALUE OF STEAM COALS FROM REGION 2

	Per Cent Maximum	Per Cent Minimum
Moisture.....	2.50	2.50
Ash.....	10.00	6.00
Volatile.....	20.00	19.00
Sulphur.....	1.25	1.25
Heating value (B.t.u.).....	14,670	14,000



Shipment analyses made by the Bureau of Mines and recorded in Bulletin 119 do not agree with the analyses given in any item. In this bulletin the analyses given vary as in Table III.

TABLE III. ANALYSES AND HEATING VALUE OF STEAM COALS FROM REGION 2 (SEE BULLETIN NO. 119)

	Per Cent Maximum	Per Cent Minimum
Moisture, as received	4.86	1.30
Ash, dry basis	11.50	6.00
Volatile ba is	26.00	15.40
Sulphur basis	2.57	0.80
Heating value (B.t.u.) dry basis	14,760	13,500

In the statement "The gas fuels from this region make excellent metallurgical coke," what does the expression "gas fuels" mean as applied to coals? Gas coal is usually taken to mean coal suitable for the manufacture of illuminating gas. Some of the higher-volatile coals from this region are excellent for this purpose and well known abroad; but all the coals apparently included by the author under the term "gas fuel" and so given in the table of analyses variations are not suitable for gas manufacture—a 28 per cent volatile coal would not usually be considered as a "gas" coal—nor do all the gas coals from this region make excellent coke.

Some of the higher-volatile coals from region 2 also are among the best locomotive coals in the world, and a large tonnage of them is being exported for that purpose. The variation in composition and heating value given are not wide enough, as any one familiar with the Pittsburgh and Fairmont coals would at once see. Table IV would, we think, more nearly represent the true facts:

TABLE IV. COMPOSITION AND HEATING VALUE OF GAS COALS IN REGION 2

	Per Cent Maximum	Per Cent Minimum
Moisture...	4.6	1.0
Ash.....	11.00	6.00
Volatile.....	40.00	26.00
Sulphur.....	3.00	0.70
Heating value (B.t.u.)	14,400	13,400

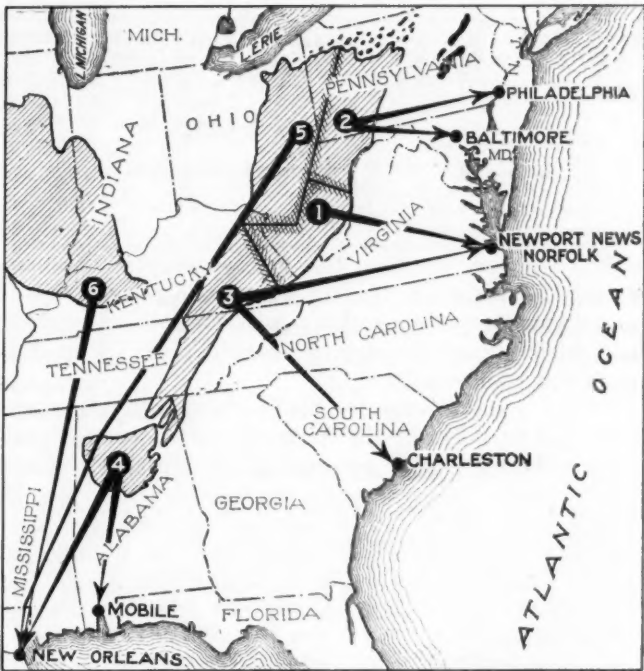
The fusibility of the ash, Mr. Davis' table shows, varies from 2,370 deg. F. to 2,910 deg. F. According to the Bureau of Mines tests, as given in *Coal Age*, Jan. 2, 1919, issue, the variation for high-volatile coals from region 2 is greater than that given—from 1,970 deg. F. to 3,010 deg. F.

According to the regional map coals from region 3 would include eastern Kentucky and Tennessee coals. These would be excellent for export, but as yet comparatively small tonnages have been shipped to Tidewater, owing to the distance of the mines from the ocean and the poor transportation and dumping facilities when Tidewater is reached. No mention is made of the varied uses to which these coals are adapted or of the fact that this region contains some of the best coking, gas and locomotive coals in the world.

TABLE V. COMPOSITION AND HEATING VALUE OF COALS FROM REGION 3

	Per Cent Maximum	Per Cent Minimum
Moisture.....	4.00	2.00
Ash.....	4.00	10.00
Volatile.....	41.00	32.00
Sulphur *	1.50	0.50
Heating value (B.t.u.)	14,700	13,200

\* Some of the eastern Tennessee coals run up to 5 per cent or more sulphur.



DAVIS MAP OF COAL FIELDS AND PORTS

Truly important exporting fields are Nos. 1 and 2, in the northern end of the main or Appalachian field. The Central field, in Illinois, Indiana and western Kentucky, is not, at least as yet, an exporting area, and indeed it probably never will be, as the coal fields are remote and the quality of the fuel is not as high as those of the Appalachian field. As an exporting point, Mr. Wadleigh emphasizes the importance of Pensacola, which is more east than Mobile by 40 miles and (like that port, on the Louisville & Nashville R.R.

The table of analyses given does not show the actual variations, which I would give as in Table V.

"Coals from region 4 are well suited for gas making," Mr. Davis continues. According to the regional map, region 4 includes only the Alabama fields; if so, the statement quoted needs explanation. Some of the Alabama coals are suitable for gas making, but the tonnage used for that purpose is small, and the greater part of the Alabama coal output is not at all suitable for gas making, if by gas making is meant the manufacture of illuminating gas.

Table VI, showing the distribution of Alabama coals, is taken from *Coal Age*, Jan. 22 issue.

TABLE VI. PURPOSES FOR WHICH ALABAMA COAL IS USED

Uses	Per Cent
Coal made into coke.....	33
Iron companies.....	10
Railroads.....	20
Steamships.....	5
Domestic purposes.....	10
Miscellaneous steam purposes	22

As far as the export trade is concerned, Alabama coals are as yet a small factor. In 1919 the total exports were: From Pensacola, 40,606 tons; from Mobile, 6,224 tons. From New Orleans 15,818 tons were exported in 1919, most of which probably was Alabama coal.

It will be noticed that the regional map does not give Pensacola as a tidewater port for the Alabama region. Today about 20,000 tons per week are being exported from Pensacola and Mobile, mostly to Cuba and South America.

The table giving "The average composition and heat value" of coals from region 4 does not by any means give a correct idea of the coals in this region. The maximum variations of all sizes of Alabama coal, as shown in Bulletin 119, are given in Table VII.

TABLE VII. VARIATION IN PROXIMATE ANALYSIS AND HEATING VALUE OF ALABAMA COALS AS GIVEN IN BULLETIN NO. 119

	Per Cent Maximum	Per Cent Minimum
Moisture, as received.....	6.90	1.00
Ash, dry basis.....	12.00	5.20
Volatile, dry basis.....	39.20	28.20
Sulphur, dry basis.....	2.13	0.47
Heating value (B.t.u.), dry basis.....	14,626	13,071

If, however, we take the whole range of Alabama coals, the variation is still greater, especially as regards volatile content, coking coals from the Tuscaloosa and Birmingham districts averaging from 25 per cent to 26 per cent volatile.

There also is considerable variation in the structure and hardness of the Alabama coals, not mentioned in the article under consideration, the lower-volatile coking coals being considerably softer than are the high-volatile coals. As a rule the only Alabama coals suitable or available for export are the high-volatile coals, some of which are of excellent quality and hard enough to stand transportation and dumping with but little breakage.

Mr. Davis' statement that "coals of region 5 are quite similar to those of region 4" is not strictly accurate and is too broad—some of the coals in region 5 are similar to some of those in region 4 would be more in keeping with the facts. At any rate, the coals from region 5 are neither suitable nor available for export, the latter owing to their geographical location.

### Liquid Oxygen Ousts Powder in Germany\*

BY GEORGE S. RICE†

SOON after the armistice I conducted as thorough an investigation as was permitted at that time, into the use in Germany of liquefied oxygen for explosives. The results of this inquiry were published in Technical Paper 243, entitled "Development of Liquid-Oxygen Explosives During the War."

Recently, through the courtesy of Dr. C. L. Parsons, former chief chemist of the bureau, who was visiting Germany, and Chester L. Benson, of the American Expeditionary Forces in Germany, data concerning the number of plants which had been installed in Germany during the period following the armistice were obtained from the Deutsche Oxyhydric Actien Gesellschaft, at Surth, near Cologne, Rhenish Prussia (one of the principal manufacturers of liquid-oxygen installations). An analysis of the figures obtained shows the following installations in different kinds of mining operation.

LIQUID OXYGEN PLANTS OF DEUTSCHE OXYHYDRIC ACTIEN GESELLSCHAFT

Location	Plants	Capacity Liters per Hour	Total
Saar coal fields.....	7	20 to 50	185
Ruhr coal fields.....	5	20	100
Upper Silesian coal fields.....	52	6 to 50	1,535
Metal mines, chiefly iron mines in Germany and upper Silesia.....	37	5 to 75	1,137
French iron mines.....	9	30	270
At potash and salt mines.....	14	20 to 60	450
For miscellaneous uses chiefly military.....	12	3 to 50	120
Grand total.....	136		3,797

It will be noted that there are 136 plants, with a gross capacity of 3,797 liters of liquid oxygen per hour.

\*Reports of investigations, U. S. Bureau of Mines. Article entitled "Data Concerning Use of Liquid-Oxygen Explosives in Germany."

†Chief mining engineer, U. S. Bureau of Mines.

Necessarily there are standby and other losses in the plants, and probably in many cases the plant capacity was in excess of the needs. If we suppose that the liquid oxygen utilized was only one-fourth of the total capacity, or 900 liters of liquid oxygen per hour, and further assume that the plants operated for only nine hours in the day and for 300 days in the year, 2,430,000 liters, or 5,346,000 lb., would have been utilized in the course of the year. Roughly, this would produce a quantity of explosives which would be equivalent to about 8,000,000 lb. of dynamite. It is not known at the time of writing whether there are other installations not included in the foregoing.

One of the most interesting features of the development has been the design and construction of small portable liquid-oxygen making plants of a capacity of only three to five liters of liquid oxygen per hour. Such plants have been constructed for moving about on trucks, thus making liquid oxygen much more available for small plants and engineering enterprises.

### Liens May Be Enforced Against Vessel For Coal Supplies

THE act of Congress which gives a lien against a vessel for supplies, etc., furnished to it does not authorize a lien against one vessel of a fleet for coal furnished to another, and an agreement by the owner to permit such a lien is invalid as against a mortgage of the vessel against which it is sought to enforce a lien for fuel furnished to another.

But where coal is furnished for a fleet, without knowledge of the parties as to just what vessel will receive it, there may be enforcement of a lien against the vessel actually receiving it. The fact that a bill for coal is charged personally against the owner of a vessel, rather than to the vessel itself, or that a note is taken to cover the price will not forfeit the right to a lien, in the absence of further showing of intention on the part of the seller to waive his security against the vessel.

Where a coal dealer holds the note of a customer and receives a payment without applying it to the note, the dealer cannot afterward so apply it, and treat an open account as uncredited, relying upon a lien to secure that account, to the prejudice of a third party holding a lien against the vessel sought to be held to secure payment of the coal account. (*U. S. District Court for Rhode Island, The William B. Murray, 240 Federal Reporter, 147.*)

### Claims in Bankruptcy

CLAIMANT sold machinery to the St. Louis Coal Co., taking back a chattel mortgage on the machinery to cover part of the purchase price, and that coal company afterward sold the machinery to the Pittsburgh-Big Muddy Coal Co. subject to the mortgage.

Held, in bankruptcy proceedings against the latter company, that the seller of the machinery could not be deemed to be a creditor of the bankrupt in such sense as to entitle him to object to an order for sale of the bankrupt company's property as a unit, it not appearing that there had been any substitution of the second coal company for the first, as the primary debtor. (*U. S. Circuit Court of Appeals, Seventh Circuit; in re Pittsburgh-Big Muddy Coal Co., 215 Federal Reporter, 703.*)





## Discussion by Readers

Edited by  
James T. Beard

### Rectangular Shafts Giving Place to Other Types

*American practice has long inclined to the opinion that a rectangular shaft in mining is less expensive to sink and more desirable on other accounts. Modern methods have proved, however, that this idea is a fallacy.*

**K**INDLY permit me to refer to a statement made in a recent article describing the visit of the engineers to the Copper and Iron Ranges, *Coal Age*, Sept. 9, p. 532. The statement reads as follows: "As has been American experience, a rectangular shaft is found saving of labor and economical of space and to be recommended where no great pressures have to be withstood."

My attention was drawn to this statement by the general manager of a West Virginia coal company, who is anxious to ascertain what is the best practice in sinking shafts in coal mining. Believing that this statement has inadvertently crept into a long article, and that it might mislead many to think that the rectangular shaft represents the best practice, I am taking the liberty of offering a brief comment on this subject.

According to our experience in the sinking of shafts and estimating the relative costs of different types, I have no hesitancy in stating that the general opinion of engineers, in this section of the country at least, is that the rectangular shaft is more expensive to sink than either the elliptical or circular form.

#### MODERN PRACTICE PREFERS THE CIRCULAR FORM OR FLAT SIDES AND ARCHED ENDS

It can even be said that, for the past ten or twelve years, the practice in sinking a concrete-lined hoisting shaft has been to construct it with flat sides and arched ends; and, in the case of air shafts without stairways, the circular form is preferred as providing the least rubbing surface per square foot of sectional area, thereby reducing the friction of the passing air to a minimum. If an air shaft is to have a stairway, however, the air end of the shaft is made as nearly circular as possible.

Experiment has proved that eddies form in the corners of a rectangular shaft to such an extent as to render that space of little service in providing the necessary area for the passage of the required air volume. This well-known principle has led modern designers to plan shafts as nearly circular as possible.

In planning a concrete-lined hoisting shaft, today, the practice is to make the sides flat, which provides a rectangular section for the hoisting compartment; but the two ends of the shaft are curved or made semi-circular, thereby not only providing convenient compartments for installing pipes, conducting wires and ladderways, but affording ample space for the round of air occasioned by the passing of the cages up and down the shaft.

These comments, of course, refer particularly to concrete-lined shafts and to timber-lined air shafts in

which there are no stairways. In many states or districts the most common form of cross-section is a hexagon or octagon and the frames are set or placed accordingly.

THE R. G. JOHNSON CO.

Pittsburgh, Pa.

### Centrifugal Force in Fan Action

*Centrifugal force held to be the basic principle of the action of all types of ventilating fans constructed after the general form of this class of machines.*

**R**EADING the article of David W. Evans, *Coal Age*, Sept. 2, p. 487, leads one to conclude that the theory of centrifugal fans is less understood than that of any other mechanical appliance used in mining practice. In spite of all that Mr. Evans has said regarding his experiments, which are interesting, it is my firm belief that the efficiency obtained is due to the kinetic energy imparted to the air by the movement of the fan blades.

Centrifugal force is one of the fundamental principles of revolving bodies, depending on their weight and speed of rotation. It is well known that air possesses weight and, with some modification is subject to the same laws of nature as any other medium. If this was not so it would not have been possible for Professor Rateau, a well known authority, to have constructed his turbo compressor, which depends on the centrifugal force of the air revolved in the machine.

While I have not had the opportunity to conduct experimental tests, as Mr. Evans has done, I feel sure

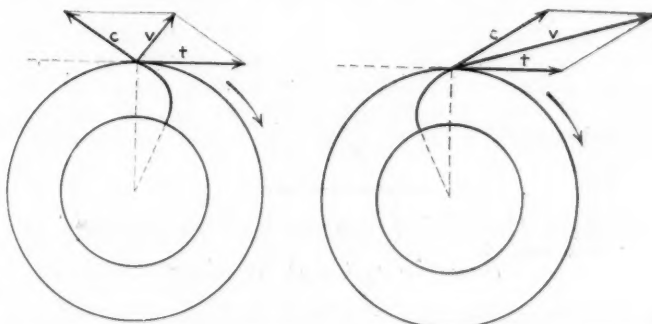


DIAGRAM SHOWING THE EFFECT OF BLADES CURVED BACKWARD AND FORWARD

that his conclusion that air "is not subject to the same laws of centrifugal force as is a more solid medium" is wrong. Some time ago I constructed a diagram showing the reaction of the forces at the blade tips when the blades are curved forward in the direction of rotation.

On the left of the accompanying diagram is shown the usual manner of illustrating the reacting forces when the blades are curved backward. On the right, is shown what takes place when the blades are curved forward. In each of these figures, *c* represents the velocity of the air traveling along the face of the

blade and due to centrifugal force;  $t$  is the tangential velocity of the blade tips; and  $v$  the resultant velocity of the air. The two diagrams make clear how the force of the expelled air is increased when the blades curve forward.

It was on this principle that the Rateau fan and turbo compressor were each designed and constructed. At one colliery, I remember this fan gave 250 m<sup>3</sup> against a water gage of 400 mm., showing an equivalent orifice of 0.083 m<sup>2</sup>. This is equivalent to an air volume of  $250 \times 35,315 = 8,829$  cu.ft. per min., against a water gage of  $400 \times 0.039 = 15.6$  in., which shows an equivalent orifice of

$$A = \frac{0.0004 \times 8,829}{\sqrt{15.6}} = 0.894 \text{ sq. ft.}$$

Or,  $0.894 \times 0.093 = 0.083 \text{ sq. m.}$

The tendency in modern fan practice is to give the fan blades a curvature forward. This is shown in the change that has been made in the construction of the more recent Capell fans, the blades of which were formerly curved backward.

#### OBJECTION URGED TO LARGE SCOOP BLADES

It appears as though fan designers have attempted to utilize both the centrifugal force, and the benefit to be derived from the vacuous space behind the blades, by giving the latter the shape of a large scoop; also, by placing small auxiliary blades between the main blades. It seems to me, however, that a greater pressure is exerted on the large scoop blades, and more power is required to force the air through the fan, which would account for the lower efficiency of this type of fan.

In closing, there is one point that puzzles me in connection with the illustration Mr. Evans gives of the great rush of air that follows behind a fast moving train. Now, it is reasonable to assume that this rush of air depends on the vacuous space left behind the train; and the smaller the size of the cars, the less will be the rush of the air. Then, applying this reasoning to the fan, why did Mr. Evans decide to reduce the size of the blades in his last design, if the action of the fan depended primarily on the vacuous space behind the revolving blades? HENRY BOCK.

Staunton, Ill.

#### System the Chief Factor in Production in American Coal Mining

*Better organization and a superior system of mining the coal and hauling it from the working face to the shaft bottom have contributed more largely to a greater production at lower cost in American mines, as compared to those in Great Britain, than the natural advantages, which are often claimed to favor coal mining in America.*

READING the article of T. J. Shenton, *Coal Age*, Aug. 12, p. 350, would lead one to think that the mining of coal in Great Britain will soon have reached the stage where it will be no longer profitable because of the small output per man and the resulting high cost of production.

Mr. Shenton ascribes the general thinness of the coal seams and great distance of underground haulage as the main causes of low production. But my experience as a mine official for seven years in England, causes me

to express the opinion that the system of haulage in British mines is much at fault. It is not alone the length of haul which always comes with the increased development of a mine.

In most of the mines in England the endless-rope system of haulage is employed on the main roads, which necessitates providing and maintaining a double roadway 12 to 14 ft. in width. Because of the great depth and thinness of the coal seams, the longwall method of mining is generally employed, and the resulting settlement of the overburden greatly increases the cost of keeping these wide roads open. Under such conditions the outlay for timber for the length of haulage rope required is excessive, to say nothing of rails and track rollers for the double track.

However, these items of increased cost, do not fully answer the question why American miners produce more coal per man than those in Great Britain. I cannot agree with Mr. Shenton's assertion that the coal operators in America are willing to incur greater risks in the operation of their mines than is permitted in England, referring chiefly, I suppose to the use of electricity in mines.

In that regard I agree with Mr. Rice, who claims that with proper precautions electric haulage and electric coal-cutting machines could be used in Great Britain, but that existing conditions have forced them out of the mines. In my opinion, it is neither wholly the fault of the operators, nor is it the result of natural conditions.

#### FORMER ATTITUDE OF LABOR TOWARD THE INTRODUCTION OF MACHINE MINING

For example, a number of years ago the Gillot & Copely cutting machine driven by compressed air was introduced into some of the mines, and it was not long before the English miners, long accustomed to mining coal with a pick, declared a strike. They told the "putters" or "drawers," that they were opposed to the use of the "iron man," as they called the machine. The result was that the machines had to be taken out of the mines before the men would return to work.

In another instance, a Hurd bar coal-cutter electrically driven, was installed in the mine and, after a lot of persuasion, was allowed to work. Now, if the operators of Great Britain were unwilling to incur the risk of using electricity in the mines, they would not have installed either of these machines, and there would have been no need for a law prohibiting the use of electrical power in the mines.

The argument of unwillingness to incur risk in mining has no foundation in fact. On the other hand, the higher wages paid miners in America and a better system of organization and co-operation have increased the output per man and reduced the cost of production in America, while the lack of system in England is the chief handicap in the operation of mines in the latter country. To appreciate that fact one has but to study the conditions that prevail in British mines.

In practically all the mines in England, small cars having a capacity of from 600 to 1,000 lb. are used. In most of the mines these cars are not conveyed to the working face, which is often a long distance, say from 500 to 2,500 ft. from the main haulage road. The English miner digs his coal and is then compelled to hire a putter or drawer to push or haul the coal from the working face to the main haulage road.

Ordinarily, it takes two drawers to handle the coal, in this manner, that a single miner will dig and these



helpers seldom do other work. The system here described is the rule and not the exception in British mines. Without question, it is an antiquated system and the chief cause of the handicap in English mining. Finally, let me say the suggestion of "superiority" in scientific mining in America is one born of prejudice and is unreasonable, as Mr. Shenton suggests.

New Castle, Col.

V. FRODSHAM.

### Other Safeguards Needed in Electric Firing

*Accidents of various kinds that occur in connection with electric firing show the need of special safeguards to render them less liable to happen. The fact that men become careless and forgetful is the chief cause of these accidents.*

**W**HAT has been suggested by R. H. Sisley, in respect to soldering together the lead wires of an electric fuse, *Coal Age*, Sept. 9, p. 546, is a good plan as far as it goes. It will not, however, eliminate all the sources of danger in this method of firing.

Allow me to mention at least four causes that should be considered when striving to make electric firing safer. Before doing so, however, I want to refer to one or two accidents that have occurred in my own knowledge only recently. I believe that these will serve to show clearly the need of the utmost caution and presence of mind on the part of men engaged in this work.

A short time since, a man coming from the powder magazine and holding in his hand ten or twelve caps or detonators accidentally struck his head against the trolley wire, with the result that the caps he held in his hand exploded and the man was blown to pieces. No doubt, this man was careless and held the caps in any shape, many of them perhaps being crosswise, which would make them liable to explode when the shock of the electric current was felt and the man's grasp tightened.

Another accident happened in another mine where a man, having two shots to fire and using a portable electric battery for that purpose, put off one of the shots first and a little later approached the face to arrange for firing the second shot, without taking the precaution or forgetting to disconnect the firing cable from the battery, which may have retained some of the charge. The moment the lead wires of the second shot were connected with the cable that shot exploded killing the man instantly.

#### OTHER SOURCES OF DANGER IN ELECTRIC FIRING

Now, what I want to suggest is that, while the plan of soldering together the lead wires of an electric fuse, as suggested by Mr. Sisley is a good thing, it only serves to eliminate one source of danger. It will prevent the explosion of the shot up to the moment the lead wires are pulled apart.

Another source of danger, however, arises from the exposed copper tube of the cap, which I want to urge should be insulated with proper material in order to avoid an explosion following the accidental contact of the cap with a live wire or other source of electricity. Had this been the case with the caps the man carried in his hand when he struck his head against the trolley wire, they might not have been exploded. Of course, the lead wires themselves should be thoroughly insulated leaving only the ends of the wires bare for attachment to the firing cable.

But, more important than all, let me say, is to have the countersunk buttons of the receiving attachment

of the generator so adjusted that they will be automatically released by the discharge from the battery. Such an automatic release would have prevented the second accident I have mentioned in which the man forgot to disconnect the firing cable from the battery before proceeding to connect up the lead wires of the second shot in readiness for firing.

It is my belief that if the four safeguards I have mentioned were put into practice—namely, insulation of the copper tubes of the caps; insulation of the lead wires; soldering together of the ends of these wires, as mentioned by Mr. Sisley; and the automatic release of the leads of the shotfiring cable—most of the dangers attending electric shotfiring would be eliminated, and fatal accidents from this cause avoided.

Unfortunately, men will be careless and forgetful. The miner is naturally unmindful of his own safety and prone to take chances in the hope of expediting his work. While it is not always possible to eradicate these elements of human nature, it is possible to safeguard the appliances used in the work of shotfiring.

Leckrone, Pa.

MINE FOREMAN.

### To Improve Air-Lift Efficiency

*Items in the design of an air lift that, if carefully considered, greatly improve its operating efficiency and reduce the cost of installation.*

**R**EFERRING to the interesting question regarding an air-lift installation, answered in *Coal Age*, Oct. 14, p. 810, kindly allow me to draw attention to one or two points that are worthy of notice.

While the reply is undoubtedly right in the conclusion reached that it would be inadvisable to change the present installation to a two-stage lift, the calculation of the volume of free air required to lift 20 gal. of water per minute a height of 200 ft. is double what has been found necessary in installations we have made.

It is only fair to assume that this is due largely or wholly to the failure to install properly designed foot-pieces and proportion the piping to meet the requirements of the desired flow. In the present instance the 2-in. discharge pipe is too large for a flow of 20 gal. per min., resulting in slippage.

For this flow, I would use a 1½-in. pipe at the bottom, enlarging this to a 1½-in. for the upper portion of the lift and provide a submergence of 50 per cent. As a matter of fact, the results would exceed the estimate, these figures being liberal, and the operation should not require an air pressure exceeding 90 lb. per sq.in., including friction.

In regard to the efficiency of a properly designed air lift, nearly all of our small lifts will run from 22 to 29 per cent overall efficiency; and in the larger installations this has reached 41 per cent. The statement that an air lift "rarely shows more than 10 per cent efficiency" cannot be taken as referring to any modern and well designed installation.

J. E. M. SCHULTER,  
Sullivan Machinery Co.

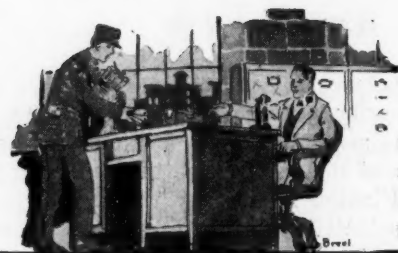
Knoxville, Tenn.

[We are glad that this correspondent has drawn attention to the great advance that has been attained in the design of air-lift pumping. Reference to the tabulated results obtained in two recent installations show submergencies of 41.8 and 46 per cent. In estimating the air volume required, the constant 125 used in the formula, page 810, will vary from 250 to 300, depending on the size of the installation.—EDITOR.]



## Inquiries of General Interest

Answered by  
James T. Beard



### Gas Gives a Cap But Will Not Explode

*Carbon dioxide diffusing into methane or marsh gas, under conditions that practically exclude the air, produces a mixture that gives a brief flame cap in the lamp, but is not explosive.*

RECENTLY, when making my daily examination of the mine I discovered gas at the face of a room that had been driven in a distance of about 50 ft. from the heading. The pitch is such that the coal is about 5 ft. higher at the face of this room than on the heading. Using a normal flame, this was lengthened to a height of 3 in., while a  $\frac{1}{2}$ -in. flame gave a 2-in. cap. The air in the place was very poor. The mixture, however, is not explosive.

Kindly say what this gas may be; and state whether it is possible to cap carbon monoxide and give its explosive range and the maximum explosive point.

Spangler, Pa.

FIREBOSS.

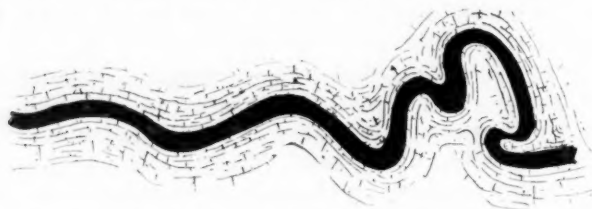
As has frequently been explained in *Coal Age*, the gas in this instance was probably "flashdamp," which is a mixture of methane and carbon dioxide, specific gravity, 0.924. Although commonly explosive, it is probable that an excess of carbon dioxide rendered this mixture inexplorable.

The explosive range of carbon monoxide is from 16.5 per cent to 75.0 per cent; maximum explosive point, 29.5 per cent. Owing to its being extremely poisonous, it is not possible to cap this gas in the mine.

### Working Badly Contorted Coal

*The loss of much coal is certain in the working of highly contorted seams, unless special methods are used that are adapted to the varying conditions, and experienced workers employed.*

AFTER making many attempts to find a safe and sane method of working out the coal in a strangely contorted seam in this region I decided that it would make a good subject for discussion in *Coal Age*; and I



CONTORTED COAL SEAM, LOWER APPALACHIAN SYSTEM

am taking the liberty of presenting it in the hope of receiving some good suggestions.

The sketch that I am sending shows about how the seam lies. The coal varies from  $3\frac{1}{2}$  to 35 ft., in height, and pitches from 5 to 45 deg. It lies in pockets or basins that are formed by the folding of the strata. In working this coal, it has happened time and again that thousands of tons had to be abandoned and were lost beyond recovery.

As can well be imagined from the sketch I have drawn, there are times when the rock that should form the roof of the coal is almost perpendicular. The coal is soft and cokes well, much like Pennsylvania coal; but the top is mean to handle under a heavy roof pressure, especially on the steep pitches.

What I want to know is how this seam should be worked to get out the largest amount of the coal safely. We have used the room-and-pillar system, but with little success. At times the face of the coal will stand 75 ft. high; and again it will thin out to less than 3 ft. The thinnest coal worked is  $3\frac{1}{2}$  ft. thick.

Any information that will tell how such coal can be safely and economically worked will be appreciated.

Rockwood, Tenn.

P. C. CRAVEN.

The seam described by this correspondent appears similar to the more contorted seams of the anthracite region. It is quite probable that *Coal Age* readers who have had experience in working those folded seams can give many helpful suggestions in this instance. The method of extraction will change with the changing character of the seam. Chutes must be driven up from the gangway levels where the coal pitches sharply. The work under those conditions is dangerous and requires experience. Let us hear from the anthracite men.

### Submergence in an Air Lift

HAVING read with a great deal of interest the reply to an inquiry regarding an air lift, which appeared in *Coal Age*, Oct. 14, p. 810, I want to ask if the depth of submergence given as "50 per cent greater than the actual lift," is not too much, or at least more than necessary. It would make the discharge pipe submerged 60 per cent of its entire length. Some notes that I have recommend 50 per cent, which makes the depth the pipe is submerged equal to the actual lift. Users of this form of equipment are naturally always anxious to reduce the submergence to a minimum.

The reply also estimates the required air pressure as sufficient to overcome the head due to the depth of submergence, only. Should not the air pressure be calculated for the entire length of the discharge pipe?

Chicago, Ill.

SHELDON SMILLIE.

The question of ascertaining the necessary depth of submergence in an air lift depends on the style of equipment in use. Attention has already been called to this matter in a short letter on the preceding page, discussing this feature of air-lift practice in the more recent designs of the Sullivan Machinery Co. In some modern installations the submergence is but slightly in excess of 40 per cent.

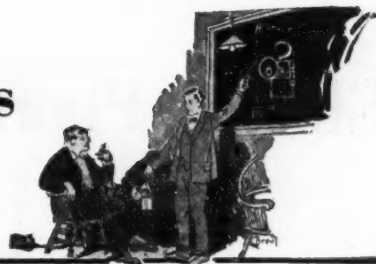
In reply to the second question, it can be said that the required air pressure is what will force the air down the air pipe to where it enters the discharge line, after which the buoyancy of the air does the rest, causing it to rise and lifting the water as it rises.





# Examination Questions

Answered by  
James T. Beard



## Mine Foremen's Examination, Charleston, W. Va., 1920

(Selected Questions.)

QUESTION—(a) *What are the duties of a mine foreman as to slopes, planes and haulways?* (b) *How often should he visit the working places and when should he go to the next place?*

ANSWER—(a) The foreman is required by law (Sec. 65) to see that all slopes, engine planes and haulage roads are driven of sufficient width to permit men to pass moving cars safely. Or refuge holes, 5 ft. wide and 4 ft. deep must be made level with the road and not more than 60 ft. apart and kept free of all obstructions. These holes must be whitewashed and the roof and sides made secure.

(b) The foreman or his assistant is required (Sec. 69) to visit and carefully examine each working place in the mine, each day, while the men are at work. If danger is found he must not leave the place until it is made safe.

QUESTION—(a) *The anemometer registers 170 r.p.m. in an airway 7 ft. high and 12 ft. wide; what quantity of air is passing?* (b) *Where would you apply the water gage; and does it increase or decrease as the workings are extended, all other conditions remaining the same? Why?*

ANSWER—(a) The sectional area of this airway is  $7 \times 12 = 84$  sq.ft., and assuming this is an average reading for the entire area, the estimated volume of air passing is  $170 \times 84 = 14,280$  cu.ft. per min.

(b) The water gage should be placed on the side of the fan drift, at a suitable distance from the fan, in order to include the resistance of the shafts. When placed on the door or brattice separating the main intake and return airways, the reading of the gage represents the mine resistance only and does not include the shaft resistances.

As the workings are extended, the resisting power of the mine increases, which means a higher gage pressure and lesser air volume, for the same power producing the circulation. The reason is that the gage is a measure of the frictional resistance of the mine as determined by the amount of rubbing surface per square foot of sectional area.

QUESTION—(a) *How should electric wires be installed inside a coal mine?* (b) *What precautions are required for same? State fully.*

ANSWER—(a) As far as practicable, electric conductors should be kept off the travelingways. On shaft or slope bottoms and at all points where men are obliged to pass or to work, all live wires should be properly protected so as to avoid accidental contact of persons with the wires. The wires must be hung on substantial supports and insulators. Trolley wires should be hung on one side of the haulage road, opposite to that on which men may travel. If possible, high-power conductors should be carried over the surface to a point

nearly over the working face and taken down into the mine through a drillhole at that point.

(b) All electrical installations should be made by a competent electrician who is familiar with mine conditions and requirements. Danger signs should be posted in conspicuous places, warning persons of the presence of live wires. Rules and regulations should be adopted and enforced to insure the safety of the workmen.

QUESTION—(a) *What is the mining law regarding shooting coal from the solid?* (b) *What dangers may arise from same?* (c) *What kind of explosives would you recommend from a safety standpoint?* (d) *How many shots can be fired at one time in any place?*

ANSWER—(a) A written permit must first be obtained from the district mine inspector (Sec. 36), before any coal may be shot from the solid; and miners must obtain permission from the operator or foreman to do such work. The permit must state the conditions under which solid shooting can be performed in the mine.

(b) Solid shooting is liable to cause a blowout shot, in which case the force of the explosion will be largely expended on the air and may cause a dust explosion.

(c) With a view to insuring the greatest degree of safety in blasting in mines, only permissible powders should be used.

(d) The West Virginia Mining Law (Sec. 79) forbids the firing of more than one shot at a time, in a miner's place.

QUESTION—(a) *In a mine where 480 men are employed and 53 mules, what would be the minimum quantity of air required?* (b) *What is the rubbing surface of an entry 750 ft. in length, 6 ft. high and 14 ft. wide?*

ANSWER—(a) The requirement of the state mining law (Sec. 17) is a minimum air volume of 100 cu.ft. per min. for each person employed in the mine, which would demand, in this case,  $480 \times 100 = 48,000$  cu.ft. per min. It is a custom, moreover, to allow a minimum of 500 cu.ft. per min. for each animal underground, which would be an additional  $53 \times 500 = 26,500$  cu.ft. per min. The total circulation in this mine should therefore be 74,500, say 75,000 cu.ft. per min.

(b) The perimeter of a  $6 \times 14$ -ft. airway is  $2(6 + 14) = 40$  ft.; and the rubbing surface is therefore  $750 \times 40 = 30,000$  sq.ft.

QUESTION—(a) *Is it necessary for a miner to examine his working place? If so, when should this be done and why?* (b) *State the mining law in regard to furnishing timbers and setting of same.*

ANSWER—(a) Yes, as required by law (Sec. 76), and for his own safety and knowledge, every miner should carefully examine his place before starting to perform any work therein.

(b) The law requires every workman in need of props, cap-pieces and timbers to notify the mine foreman or other person in charge, one day in advance, giving length and number wanted and to set such timbers properly. In an emergency, timbers may be ordered for immediate delivery.

# Electric Plants Pay More and Get Poorer Coal\*

Fuel Situation Causes Average Increase of 176 Per Cent in Price to Central Stations—20 Per Cent Greater Consumption Necessitated by Poor Quality—Low Efficiency and Higher Price Raise Cost 217 Per Cent

WHILE all readers of *Coal Age* know the effect of the present coal situation in their immediate neighborhood, the specific effects on storage, prices, economy, boiler rating, haulage, etc., in different parts of the country have not been so generally familiar. The *Electrical World*, New York, has collected data on coal consumption, prices, stocks, etc., from fifty-four central stations scattered around the United States and having a total coal consumption of 2,214,568 tons (January to June, 1920). The data are presented in the accompanying table.

With few exceptions, the present supply of coal is sufficient only to meet the normal operating requirements. No particular section of the country is favored in this respect, although in those states where water power is predominant the situation is somewhat better. Nearly as much difficulty is experienced by those companies operating near the coal fields as by those operating in more remote sections.

With an average of only twenty-two days' storage as against a normal supply of sixty days, it is very evident that there is a low margin of safety in the present storage of companies. Should the supply of coal be interrupted for three weeks, electric service would have to be curtailed so much that the public would be greatly inconvenienced and industrial plants subjected to great losses. There is a bright side, however, in that some companies report slightly better deliveries on contract with less buying in the open market.

## RESERVES OF EAST AND WEST NEARLY EQUAL

In the two sections where the study was most complete—namely, the Eastern Atlantic and Middle Western States—storage conditions are practically the same, twenty-two Eastern companies reporting an average of eighteen days' storage on hand and twenty-one Western companies fourteen days' supply. Normal requirements of Eastern companies would average fifty-one days and those of the Middle West companies thirty-six days. Present storage is, therefore, 35 and 39 per cent respectively in these two sections of the country.

Even if coal could be obtained under present conditions, the general problem of utility operation is far from satisfactory. Price and quality of coal in their effect on the cost of power, to say nothing of the effect of the quality on operating difficulties, are items that should certainly be taken into consideration in determining equitable rates. A comparison with conditions in 1914, which are taken as normal, show that utilities are paying from 80 per cent to 500 per cent more for coal. Reports of fourteen Eastern companies show an average increase of 190 per cent and seventeen Mid-Western utilities show average increases of 172 per cent. An average of forty-three companies shows an increase of 176 per cent. While this is a serious problem to those companies whose rates are not on a basis of coal prices, the most interest lies in the general reduction in the quality of coal. Virtually all companies are buying coal

wherever it can be had, but even those companies that are obtaining a supply from the same sources as in 1914 are suffering from a reduction in quality. High moisture and ash content, dirt, sulphur, clinkering and difficulty in keeping up fires have reduced the efficiency of the boiler room. Although their coal is virtually all bought from the same mines as in 1914, twelve of these companies which had modern equipment and made no change are burning 20 per cent more coal per kilowatt-hour than they did in 1914, owing to the lower quality of the coal. These same companies are paying an average of 181 per cent more for coal than in 1914. In other words, the combined increase due to cost of coal and loss of efficiency is 217 per cent. The plants considered are typical average plants with a coal consumption of 2.5 lb. to 4.0 lb. per kilowatt-hour.

In the majority of cases, plants were not as modernly equipped in 1914 as at present, so that there has been a reduction in pounds of coal burned per kilowatt-hour even with present coal. With coal of the same grade as that of 1914, the increase in efficiency would be even more marked for those companies that have shown improvement. It is evident, therefore, that the central station is not realizing on the result of careful engineering practice in so far as increased profits are concerned and that the improvements have helped only to meet the present high prices and poor quality of coal.

In general, there has been little change in the district from which coal is obtained since 1914. Of twenty-two Middle Western companies, sixteen are still obtaining their coal in local districts as in 1914. Three companies that had formerly been using Eastern coal have changed to local coal and three companies still continue to obtain their coal from Eastern territory. The hauls of Middle Western companies are about 400 miles (644 km.) as a maximum, with most hauls not over 125 miles (201 km.). In the Eastern Atlantic States there has been very little change in the source of supply other than local changes. The maximum haul is about 500 miles (804 km.), with a haul of not over 100 miles (161 km.) in most cases.

## PLANTS FORCED TO BUY COAL IN OPEN MARKET

Delivery conditions are about the same throughout the country, the supply received being sufficient for immediate requirements in most cases. In numerous instances operators are not fulfilling their contracts and central-station companies have found it necessary to buy coal in the open market to keep plants operating.

So many factors enter into the cost of storing and handling coal that little uniformity is shown in the costs given for this work. The cost for unloading and handling through bunkers seems to be in the neighborhood of from 10 cents to 15 cents per ton, while the next uniform price for yard storage and handling jumps to 50 cents per ton. With those companies which maintain more elaborate storage facilities and which include in their figures all items—depreciation, interest on the investment and everything that enters into this expense—the cost is approximately \$1 per ton.

\*Abstracted from *Electrical World*, Oct. 16, 1920.



## How the Coal Situation Has Affected Central Stations in the Last Six Years

O. M.—Open Market. C.—Contract. L. T.—Long Ton. R. of M.—Run of Mine. M. R.—Meeting Requirement

Company	Tons Used, Jan. 1 to July 1, 1920	Kw. Hrs. During Period	Load Factor	Tons of 1914 Coal that would have been used in same period	Tons on Hand and Prospects	Storage Should be, Tons	Source of Coal Supply and Distance from Station	Condition of Deliveries	Name of Coal, 1920	B. U. Volatile Matter, %	Price per Ton	Name of Coal, 1914	B. U. Volatile Matter, %	Price per Ton	Method of Obtaining Coal	Cost per Ton for Fuel and Handling	Lib. per Kw.-Hr. 1914-1915		
NEW ENGLAND																			
Cambridge (Mass.) Electric Light Co.	17,809	15,547,747	42	15,540	5,350 L. T.		Pa. Norfolk	Not gaining for winter supply	13,900	25	\$11.53 L. T.	New River	14,500	10	\$4.49 L. T.	O. M.	30.94	2.56	
Edison Electric Illuminating Co. of Brockton, Mass.	21,306	23,824,610	40	20,284	4,164 Very poor	20,000	West Va. West Va.	M. R.	Pocharantas New River	13,900 15.0 6.80 2.50	\$11.50	New River	14,000	14	\$4.00	C.	85	3.11	
New Bedford (Mass.) Gas & Edison Light Co.	53,799	63,632,775	52	15% less	13,000 Fair	13,000	Pa. Pa.	Very irregular			\$11.50				C. & O. M. Shipments beginning		1.94		
Pittsfield (Mass.) Electric Co.	16,300	8,000,000		9,000	3400 Poor	9,000	Pa. Pa.	M. R.	Salco	14,000 20 10	\$6.00	Salco	14,500 18 8	\$1.25	25% on contract. Bal. on O. M.	C.	45	10% more	
Turner Falls (Mass.) Power & Electric Co.	12,000	10,000,000	11.5 Reserve plant	Same	2,400	2,400	550 Cambria, Pa.	10% prior to July 27, 100% or assigned care at present		13,700 28 10 3	\$3.10 at mines		14,500 22 8	\$1.75	Contract now open Market up to July 27	C.	95	3	
Danbury & Bethel Gas & Electric Light Co., Danbury, Conn.	5,792	2,899,971	49.1		600 Poor	2,500	200 Pa. Sagoy		Various		\$13.90 del.	Henrietta		\$7.25	O. M. Very little coming on contract	C.	50		
EASTERN ATLANTIC																			
New York:																			
Buffalo General Electric Co.	60,000			None		40,000	Pittsburgh	M. R.	Various	12,500 14.8 11.6 9.3				C.	Not operating	\$1.00			
Central Hudson Gas & Electric Co., Poughkeepsie.	20,800 L. T.	16,059,980	45	18,000 L. T.		10,000	W. Maryland Du Bois Clearfield	M. R.		12,100 27 15 5	\$7.42 alongside		14,000 33.0 9.0 2.0	\$3.16 alongside	C.	79	2.7		
Company "A"	22,453	8,210,973	16.2	Same	5,000	15,000	410 400	M. R.	Bloomer	13,000 21 8 3	\$3.75				C.	C.	24	Same	
Flatbush Gas Co., Brooklyn	12,475	6,981,870	32.47	11,200	5,000	Same	St. Clair, Pa. Pittston, Pa.	O. K.	Haven Run	11,000 45-75 15-20 10	\$4.70		12-15	\$2.40	C.	C.	4.20	4.17	
Richmond (N. Y. City) Light & Railroad Co.	23,700	19,739,000	62	18,000	400 Poor	3,600	Canonsville, Pa.	Same	Poor	Various	1,800 A.V. 22.6 16.2 6.4	\$11.00	Canonsville	13,800 28 3 4	\$3.70	50% O. M.	C.	Same	
Pennsylvania:																			
Company "B"	7,004	2,652,585	82	6,300	600		260 mi Cambria County, Pa.	Same	M. R.	R. of M. Cambria		\$4.00	Same		\$1.25 gross tons	C.	C.	10% more	
Countryside Gas & Electric Co., Norristown	31,853	21,330,400	35	Same	1,500 Poor	10,000	300 W. Va W. Pa	Same	50%	Various	13,800 18-20 8-10 3.0	\$4.50	Various		\$2.35	C.	C.	2.25	
Duquesne Light Co., Pittsburgh	449,441	340,806,230	70	Same	59,211 Poor	124,500	10-90 English Ford, Monongahela River	Same	M. R.	R. of M.	12,600 10.95 4.14	\$3.84	Hu. Black	12,784 10.73 400	\$1.43	C.		2.3	
Haverhill Light & Power Co., Scranton	3,639	1,680,097	49.2	Not operating	620 Slight	1,206	175 mi Pa.	100 mi W. Va	M. R.		13,700 28.92 9.36 0.68	\$6.18				C.		18	
Jefferson Electric Co., Scranton	2,937	1,378,604	45	Same	275 Slight	800	Local	Local	M. R.			\$3.25			\$1.25	C.		9.46	
Ohio Service Co., Scranton	28,735	12,728,910	46	Same	1,441	10,000	10-50 mi Ohio	Same	M. R.		11,180 38.8 10.3 5.12	\$3.26			\$1.25	C. & O. M.		3.96	
Penn Central Light & Power Co., Altoona	46,020	35,043,940	63.6	Same	600 Good	18,000	25 to 40 mi Cambria and Clarifield	Same	M. R.	R. of M.	13,492 23.44 9.86 2.5	\$3.69	R. of M.	13,878 21.43 9.2 1.7	\$1.99	C. Own mine	C.	50	
Susquehanna County Light & Power Co., Scranton	1,305	336,395	Standby	14	14 Slight	150	50 mi	50 mi	M. R.			\$4.15			O. M.	Not operating	.15		
Warren Light & Power Co., Scranton	6,461	3,768,800	44.1	Same	913	2,000	75 mi	25 mi	M. R.		13,500 31.62 10.6 1-12	\$7.40			\$2.50	C. & O. M.		3.0	
New Jersey-Maryland:																			
Monmouth Lighting Co., Keyport, N. J.	10,400	4,017,810		9,000	1,500 No prospects	4,000	200 mi Ches. Bay	O. M.	M. R.	Trojan No. 2	14,000 8-14 1.5	\$4.10	Various			C.	O. M.	4.5	
Hagerstown & Frederick Railway Co. (Md.)	23,250	14,228,000	35	20,000	500	5,000	100 George Creek	Same	Various		15	\$7.50			\$2.40	C. & O. M. own mine	.35	3.3	
Municipal Electric Light Plant, Hagerstown, Md.	6,250	3,140,000	40	5,250	100 No prospects	1,200	175 Consolidation Mine	150 Jerome Mine	M. R.			\$7.20 alongside \$4.55 at mine	Jerome		\$3.00	C.	C.	8.46	
Potomac Electric Power Co., Washington	95,146 L. T.	110,348,933	63.3		4,500	10,000	200 George Creek	370	M. R.	Big Vets	14,700 17.0 10.0 0.9	\$7.82 L. T. del.	Big Vets	14,600 17.0 10.0 0.9	\$3.25 L. T. del.	C.	C.	1.93	
West Virginia and Virginia:																			
Company "C"	30,087	31,342,700	46.2	Same	1,400	1,400	Local	Local	Satisfactory	Pitts. Ham.			Same			O. M. own	O. M.	1.70	
Consolidated Light, Heat & Power Co., Huntington, W. Va.	14,243 Also natural gas	48,705,800			2,525 Better since Aug 1	6,000	80 mi W. Va.	Same	Gaining 100 tons per day	Don Mine	12,500 31.27 16.17 3.44	\$4.01 alongside				C.	C.	2.8	
Wheeling Electric Co., Wheeling, W. Va.	26,331	15,389,270		Same	Full storage		Local	Local	Delivering as required			\$3.85	Same		\$1.40	C.	C.		
Electric Transmission Co., Big Stone Gap, Va.	15,320	13,299,000	47	Same	2,300	3,000	13	Local	100%	Kocko	14,203 35.1 8.05 1.0	\$4.00 del.			\$0.60	C.	C.	2.3	
Newport News & Hampton (Va.) Railway Gas & Electric Co.	24,705	20,185,400	51.7	22,000	100 Poor	3,000	Ches. Creek Jet	Same	M. R.	Anchor		\$2.85 at mines \$15.50 O. M.				C.	C.	2.10	
SOUTHEASTERN																			
Pennock (Pa.) Electric Co.	7,806	4,788,780	42.6	Same	No storage no prospects	3,600	100 Ala.	Same	M. R.	Pratt		\$5.40 alongside	Pratt		\$2.54 alongside	C.	C.	30	Same
Valdosta (Ga.) Lighting Co.	5,895	1,951,598		5,300	600 No prospects	2,500	Big Stone Gap, Va.	Salkan, Va.	70%	Various	25	\$8.25 alongside	Southern Star	8	\$3.50 alongside	70% contract Balance spot market	C.	50	2.5
Charleston (S. C.) Consolidated Railway & Lighting Co.	20,400	12,082,000	43	Same	1,200 No prospects	13,000	Big Stone Gap, Va.	Same	Just barely M. R.	Stonewall Creek Field	\$4.00 and \$4.50	Same				C. & O. M. to prevent shutdown	.30		

# HOW THE COAL SITUATION HAS AFFECTED CENTRAL STATIONS IN THE LAST SIX YEARS. (Continued)

O. M.—Open Market. C.—Contract. L. T.—Long Ton. R. of M.—Run of Mine. M. R.—Meeting Requirement

Company	Tons Used, Jan. to July 1, 1920	Kw.-Hr. During Period	Load Factor	Tons of 1914 Coal that Would Have Been Used in Same Period	Tons on Hand and Prospects	Storage, Should Be, Tons	Source of Coal Supply and Distance from Station		Condition of Deliveries	Name of Coal, 1920	B. & V. Volatile, % Moisture	Price per Ton	Name of Coal, 1914	B. & V. Volatile, % Moisture	Price per Ton	Method of Obtaining Coal in		Cost per Ton for Handling and Storing	Loss per Ton, 1914-1915	
							Present	1914								1920	1914			
Athens (Ga.) Railway & Electric Co.	2,637	1,133,812	42	2,400	727	1,500	340 Ky.	340 Tenn.	Very poor	Red Feather	10.972 32.28 24.38 2.04	\$10.39	Water	14.740 36.41 24.38 3.03	16.70 del.	O. M.	O. M.	15	3.5 4.3	
MIDDLE WEST																				
Wisconsin:																				
Eastern Wisconsin Electric Co., Sheboygan	15,163	8,635,289			1,171					Various						O. M.		.20	3.67 3.31	
Milwaukee Electric Railway & Light Co.	256,580	152,965,818	48	247,343	47,180	90,537	400 Ill. Ind. Ohio Penn.	400 Pa. W. Va.	Falling short	Various	9,500-12,000 8-25 6-10	\$8.30		13,000 8-11 9 4-7	\$2.60	C. & O. M.	O. M.	.36	2.76 2.66	
Wells Power Co., Milwaukee	14,840	2,366,300	36	12,600	None	None				Ill.	10,890 34-37 15-20 10-15	\$7.00		12,800 6-11 5-9	\$3.02	O. M.	O. M.		8 7	
Iowa, Illinois, Michigan:																				
Board of Water & Electric Light Commissioners, Lansing, Mich.	45,076	18,253,350	55		11,000	13,000	300-400 Ohio Ind. Ill.	400-500 W. Va. Ky.	Have gained in storage approx. 5,000 tons since July 1	Ill. Ohio Ind.	\$3.60 to \$6.75 mine		W. Va.	70c to 90c 10b mine		O. M.	C.		4-4.25 3-3.25	
City of Detroit Public Lighting Commission	21,152	12,011,766	53.3	16,517	2,210 Fair	9,000	Hoboken, Ohio	W. Va.	Gaining about 300 tons per week	Hocking Valley	12,270 39 40 12 40 4 88	\$5.37 del.	Meadow Brook	14,741 37 98 4 52 1 30	\$2.40	C. & O. M.	C.		3.65 2.75	
Consolidated Light & Power Co., Kewanee, Ill.	6,444	1,489,868	40	5,500	None	1,000	150 Franklin County, Ill.	85 Fulton County, Ill.	30%				Fulton			C. & O. M.	C.	.75	more	
Consumers Power Co., Jackson, Mich.	157,719	107,252,928	45.9	101,000 less	32,376	78,000	475 W. Va. Logan Co.	Same	M. R.	Various	13,000-14,000 10.332 to 11,600 21.4-35.5 20-24.5 13-18.2	\$2.25 10.00	Various W. Va.	10,234-11,238 14.8-37.8 19.3-24.3 12.1-18.1	\$0.85 1.25	O. M. & C.	C.		2.48 2.97	
Moline (Ill.) Rock Island Manufacturing Co.	60,940	41,006,000	41.72	About 2% less	2,630 Poor	8,000 to 10,000	83	Same	M. R.	Various Ill.	11,500 35 10 8	\$3.66	Various	12,000 35 10 8		C. & O. M.	O. M.	12 labor charges only	2.95 3.97	
Sioux City (Iowa) Gas & Electric Co.	15,000	8,974,134	60	13,000	No prospects	6,000	1,400 Franklin County, Ill.	Same	85% now, was 25%	Ill.	11,065 36 21.2 16	\$3.00 mine	So. Ill.	10 80 90 mine		C.	C.	.50	3.4 3.0	
People's Gas & Electric Co., Mason City, Ia.	10,541	5,962,000		Same	1,078	5,000	350 North, Ill.	Same	Meeting requirements		11,065 36 21.2 16	\$2.35	Same			C.	C.		4 7	
Ohio:																				
Central Electric Producing Co., Findwood	15,865	7,899,350	40	Same			Local	Local	Ample	Hocking Valley	10,500 29 52 25 57 4.5	\$3.26			\$1.01	Own mines	Same			
Massillon Electric & Gas Co.	29,527	18,628,249	70	Same	750	2,000	60 Adams, Ohio	80 Belmont, Ohio	About five cars a week above requirements	Somers Belmont	12,000 40 20 10	\$3.75	Same	Same	\$2.08	C. & O. M.	C.	1.56	\$3.5 less	
Northwestern Ohio Light Co., Lima	14,000	4,905,619		Same	500	3,500	190 W. Va.	Same	Meeting requirements	W. Va.	13,500 16	\$8.75 mines			\$4.50	C. & O.	C.	.20		
Toledo & Indiana Railroad	7,300	3,315,000	50	6,200	1,020	2,000	450 Cardinal, Ky.	Same	Gaining about 50 tons per week	Ky.	13,000 16	\$3.96 mines	Same		\$1.05 mines	C.	C.	.85	4 4 3.2	
Toledo Railway & Light Co.	132,776	105,204,890		110,100	6,620 poor	15,000	140 Hocking Valley Ohio & Mines	140 to 250 Cambridge Ohio & W. Va.		Hocking Valley	10,000-11,500 11-16 11-25 6-10	\$4.78	Cambridge, Ohio and W. Va.			C.	C.	0 10 to 0 25	3 52 3 34	
Trumbull Public Service Co., Warren	60,594	42,686,000	62	51,600	3,000	20,000	100 Pitts., Pa.	Same	Meeting requirements	Various	12,148 12 18 8	\$3.09 del.		13,000 30 8 4	\$2.00	O. M. & C.	C.	.30	70%	
Union Gas & Electric Company, Cincinnati	40,209	135,545,910	59.04	Same	10,000 Fair	85,000	245 W. Va. N. Y., W. Va.	210 N. Y., W. Va.	40% Supply	Logan	12,111 32 3 12 88 4 17	\$7.00	Kelly Creek Hazard Logan	13,000 33 0 7-14	\$1.79 14.84 del.	O. M. & Own Mine	C.	0 75	1 50 3 15	
Indiana:																				
Indiana Power Co., Vincennes	22,700	12,000,000	60	Same	2,500 Poor	6,000 to 10,000	Local										Own mines		.12	
Indiana Railway & Light Co., Kokomo	22,030	9,970,000		20,000	600 No prospects	5,000	150 Ind.	Same	Contractor furnishes 15% requirements						\$7.30	85% O. M. 15% C.	C.		Same	
Indiana Service Corp., Fort Wayne	45,594	25,975,129	53.65	Same	3,718	7,000	165 Linton, Ind.		Good	R. of M.	11,360 16 9 9	\$2.05 to \$6.00	Same		\$2.00	225 tons daily from own mine, balance O. M.	C.	.05		
Laporte Gas & Electric Co.	10,555	2,791,814	50	Same	500	1,500	Ill or Ind.	200	M. R.		10 32 75 C. \$3.50 to \$3.50		Various		\$0.90	40% O. M. 42% O. M.	C.	.20	Same	
Northern Indiana Gas & Electric Co., Michigan City	10,000	4,340,000	40	9,000	1,000 Very poor	3,000	140 Linton, Ind.	Same	30%		10,100 32 3 16 12	\$3.40 del.			\$1.60 del.	O. M.	C.	.35	20% more	
Northern Indiana Gas & Electric Co., Lafayette	24,136	3,514,964		500	3,000	Midland	118	Same	M. R.	Linton, No. 4	10,483 15 49 11 49	\$3.61	Same	Same		O. M.		1.00		
Colorado, Missouri, Nebraska:																				
Grand Junction Electric, Gas & Manufacturing Co., Colorado	4,853	1,160,918	35	Same			14 Col.	12 Col.	O. K.	Camero and Palmdale	12,000 37 7 4	\$1.00 and \$1.40	Same		\$0.70	C.	C.		Same	
Empire District Electric Co., Joplin, Mo.	26,727	53,800,340	63		4,830 Poor prospects	10,000	40 Kansas	Same	About meeting requirements	Kansas M. R.	11,000 10 9	\$3.92 to \$4.53	Same		\$1.8 0 22 90	O. M.	C.			
Little Rock (Ark.) Railway & Electric Co.	17,511	17,718,942	57	Same	1,300	5,000	200 Hartford, Ark.	Same	M. R.	Hartford Creek	13,000 13 40 14 1 9	\$2.75	Same	Same	\$1.25	C.	O. M.	.04	3.5	
Lincoln (Nebr.) Traction Co.	19,339	5,160,000		About the same	400	3,000	Kans.	Same	M. R.		12,500 36 12 4		Same	Same		C.			Same	
WESTERN																				
Albuquerque (N. M.) Gas & Electric Co.	5,881	2,188,020	35	5,470	500	1,500	85 also 250, Elston field	Same	M. R.		10,000 30 85 3 12	\$6.25	Same		\$3.35	O. M.	O. M.	.20	3 37 5 00	
Deming (N. M.) Ice & Electric Co.	1,650	526,640	30.1	Same	100 Fair	600	300 Tuley, N. Mex.	500 N. Mex.	M. R.	Carthage	12,500 27 14 3	\$5.00 at mine	Superior		\$2.30	Some on O. M.	O. M.	.40		
Denver (Col.) Gas & Electric Co.	55,457	28,200,560	59	53,000	4,350	60,000	35 Evans	35 Evans	60% of requirements	Lignite Camero	9,000 30 4 5 25	\$5.02 alongside	Lignite		\$0.50	C.	No contract	3.15	6.3	
*Also includes ice manufacture. †Not included in analysis on account of late arrival of data.																				

\*Also includes ice manufacture. †Not included in analysis in view of late arrival of data.



## Production of Coal in United States and Some European Countries, by Months, First Half of 1920, and Monthly Averages, 1913-1919<sup>a</sup>

(In Metric Tons of 2,205 lb.)

Period	United States (All Coal) <sup>b</sup>	United Kingdom (All Coal) <sup>b</sup>	France <sup>c</sup>	Belgium	Netherlands		Germany <sup>d</sup>	
					Coal	Lignite	Bituminous	Lignite
Monthly average:								
1913.....	43,089,000	24,344,000	3,404,000	1,904,000	159,000	.....	14,383,000	7,260,000
1914.....	38,822,000	22,500,000	2,294,000	1,393,000	165,000	.....	12,331,000	6,996,000
1915.....	40,190,000	21,445,000	1,628,000	1,181,000	194,000	.....	11,340,000	7,364,000
1916.....	44,611,000	21,714,000	1,776,000	1,405,000	221,000	.....	12,281,000	7,861,000
1917.....	49,245,000	21,047,000	2,410,000	1,243,000	261,000	.....	12,822,000	7,963,000
1918.....	51,272,000	19,289,000	2,188,000	1,152,000	296,000	119,000	12,301,000	8,389,000
1919.....	41,145,000	19,731,000	1,822,000	1,541,000	283,000	152,000	9,049,000	7,817,000
1919 January.....	44,577,000	19,855,000	2,473,000	1,233,000	298,000	221,000	8,832,000	(e)
February.....	33,165,000	19,700,000	2,284,000	1,269,000	260,000	145,000	8,389,000	(e)
March.....	35,197,000	20,515,000	2,125,000	1,426,000	283,000	237,000	9,358,000	7,424,000
April.....	35,290,000	19,273,000	1,745,000	1,494,000	270,000	244,000	5,145,000	7,452,000
May.....	40,743,000	22,048,000	1,733,000	1,572,000	290,000	165,000	8,824,000	7,917,000
June.....	40,187,000	13,526,000	858,000	1,456,000	262,000	112,000	8,357,000	7,119,000
1920 January.....	50,852,000	21,685,000	2,927,000	1,870,000	307,000	128,000	10,400,000	8,700,000
February.....	42,150,000	19,790,000	2,715,000	1,684,000	274,000	118,000	10,157,000	8,426,000
March.....	49,556,000	21,815,000	2,380,000	2,006,000	312,000	129,000	10,146,000	7,902,000
April.....	40,046,000	19,508,000	2,553,000	1,901,000	295,000	124,000	10,035,000	8,900,000
May.....	42,574,000	19,829,000	2,766,000	.....	288,000	111,000	10,224,000	8,705,000
June.....	48,318,000	20,835,000	.....	.....	334,000	118,000	11,008,000	9,572,000

(a) Figures from the Monthly Bulletin of Statistics of the Supreme Economic Council for July, 1920.

(b) Monthly figures estimated from weekly reports.

(c) Includes output of Alsace-Lorraine in 1919.

(d) Includes bituminous output of the Ruhr, Upper and Lower Silesia, Saxony, and Aachen districts. Excludes the Saar and Alsace-Lorraine.

(e) Statistics not available.

### Withdraw Suits Against Price Fixing in Indiana; Court Indorsement Likely

WITHDRAWAL Oct. 20 of nineteen of the suits brought by retail coal dealers of Indiana to invalidate the retail selling margin of \$2.25 a ton fixed by the State Fuel and Food Commission was considered by Jesse E. Eschbach to indicate that many coal men are of the opinion that the price-fixing orders will be sustained in the Marion Circuit Court.

It was pointed out that dealers in many localities are willing to operate under practically the same conditions as dealers who have brought suit to have the \$2.25 margin set aside. This situation, it is said, will make it difficult for dealers who remain parties to the legal action to maintain their position.

Coal supplies in many sections of Indiana are inadequate to meet the demands of domestic consumers in the event of colder weather, according to letters received by the commission. Mr. Eschbach directed a letter to retail dealers last week asking for information concerning supplies of coal on hand and the amount of fuel necessary for emergency purposes. Mr. Eschbach has indicated that an effort will be made to supply coal for emergency purposes at the state prices.

### Monongalia Men Try to Dynamite Their Way to Success in Strike

WHETHER sanctioned or not by the United Mine Workers it became evident on Sunday night, Oct. 17, that resort to the methods in vogue among some of the strikers in the Williamson field of West Virginia were being made in Monongalia County, West Virginia, where a strike has been in progress for several months, for on that date agitators of the strike, according to the Connellsville Basin Coal & Coke Co., attempted to blow up with dynamite the tippie and entrance to that company's Rockford mine. They succeeded, however, in blowing up only the water tank and a portion of the tippie, the damage being such as not to interfere with operations. The mine was working full tilt on Oct. 18. There were men in the mine at the time of the explosion, but no one was hurt. The first reports of the explosion were to the effect that a dozen men had been trapped in the mine and that the power house had been attacked, but such reports appear to be incorrect.

This was the first serious trouble in the district since the beginning of the strike early in July, although there have been numerous clashes between union and non-union

miners and other minor disturbances, non-union miners at one of the Penn-Mary mines only recently having been fired upon. A squad of state police was sent to Rockford following the explosion.

All those who participated in the unauthorized strike at the Monon mine, in northern West Virginia, operated by S. D. Brady, during the latter part of September in defiance of orders from district headquarters of the United Mine Workers, which resulted in the withdrawal of the charter of the Monon local, are back at work. It is probable that the charter will be restored to the local if officials of the United Mine Workers are convinced there will be no further disobedience of orders.

### Reported Exports of American Coal to Canada During September

RECEIPTS of American coal in Canada during the month of September are reported by the Dominion Bureau of Statistics as follows (in net tons):

Anthracite:	
Egg, nut, etc.....	303,731
Dust.....	67,895
Total anthracite.....	371,626
Bituminous.....	1,787,455

The anthracite receipts fell off sharply in comparison with the 596,555 tons reported in August, principally because of the strike in the anthracite region of Pennsylvania. Receipts of bituminous coal, although smaller by 246,000 tons than the August receipts, were the largest in any September of recent years. Cumulative receipts of both hard and soft coal during the first nine months of each of the years 1914 to 1920 have been as follows (in net tons):

First Nine Months	Anthracite	Bituminous
1914.....	3,433,000	7,442,000
1915.....	2,940,000	5,588,000
1916.....	3,474,000	9,421,000
1917.....	3,990,000	11,432,000
1918.....	3,503,000	12,686,000
1919.....	3,712,000	9,481,000
Average 1914-19.....	3,510,000	9,342,000
1920.....	3,698,000	10,144,000

The 1920 movement of anthracite to Canada is thus behind 1917 and 1919 but exceeds the 6-year average of 1914-19 by 188,000 tons, or 5.4 per cent.

The bituminous movement, while much behind 1917 and 1918, likewise is ahead of the 6-year average. Against an average of 9,342,000 tons in the first nine months of 1914-19 the year 1920 shows 10,144,000 tons, an increase of 802,000 tons, or 8.6 per cent.

## Freight-Car Loadings Set Record

A NEW record for this year for the number of cars loaded with commercial freight on the railroads of the United States was set during the week ending Oct. 9, according to reports compiled by the Car Service Division of the American Railway Association. The total was 1,009,787 cars, as compared with 982,171 for the corresponding week of 1919 and 959,722 during the corresponding week of 1918.

This was the first week this year in which the freight car loading passed the million mark and represents an increase of nearly 34,000 over the week of Oct. 2. The total of 1,009,787 for a week has been exceeded only once, according to the records of the Car Service Division. In one week of 1919 the total car loading was reported as 1,011,422. Increases as compared with the corresponding week of 1919 are shown in the Allegheny, Eastern, Northwestern, Central Western and Southwestern districts, while there were decreases in the Southern and Pocahontas districts. Increases are shown in the loading of coal, coke, ore and forest products, while there were decreases in grain and grain products, livestock, merchandise and miscellaneous freight, as compared with the corresponding week of the previous year.

## Government Ownership of Mines Favored

JAMES HAMILTON LEWIS, Democratic candidate for Governor of Illinois, who during his term as U. S. Senator from that state was regarded in some quarters as a spokesman for the national administration, recently made a speech at Virden, Ill., in which he came out unreservedly for Government ownership and operation of coal mines. The points in the program he proposed were:

- (1) Miners to work under a contract made with the Government.
- (2) Government agents to supervise the mines for safety with regard to gas and general health conditions.
- (3) Government to contract with the miners or their representatives for the output and distribution of coal to such points as necessity might demand.
- (4) Government standing board to hear all grievances and settle all demands arising between mine workers and mine owners.

The latter point seems a little hazy, because, if the original working contract were made with the Government, it is difficult to see how there could be a mine owner, or if there were, how such owner could possibly be interested in any demand the miners might make.

## Bankers Call Proposed Nationalization of Industries an Economic Fallacy

NATIONALIZATION of industry and reduction of output by labor are branded as economic fallacies in resolutions adopted by the American Bankers' Association in its convention in Washington last week. The resolutions read:

We would brand as a proven economic, political and social fallacy the widespread agitation for the so-called nationalizing of industry, and express our complete disapproval of such socialistic theories as they have been concretely expressed in the proposed Plumb plan for nationalizing the railroads. We assert the supreme importance to the maintenance of American progress, of the American idea of individual freedom and initiative in business and the private ownership of property. We disapprove any steps looking toward the further participation of the Government in business activities and regard as demonstrated beyond possible question the inefficiency and wastefulness of public ownership or management in any form of business enterprise.

We would regard with apprehension and disfavor any further extension of governmental activities into the banking field, and while we approve of the postal savings system as a means of service to a large number of people not otherwise in touch with banking accommodations, we believe that any extension of this system through increased interest rates or otherwise, which would place it in competition with privately-owned banks, would be a mistake and in the long run opposed to public interests.

With especial emphasis we would call the attention of labor to the essential unity of the three great elements entering into the industrial structure—labor, capital and brains. A fair balancing

of interests between these factors in production of wealth must be maintained to insure their common prosperity. Failure to preserve this balance may easily wreck industry, and we call upon each factor involved to recognize this basic truth. Only through the increased production of wealth can there be a larger distribution of wealth and we call upon labor to abandon the economic fallacy that it can attain greater prosperity through reduction of output. The tremendous costs to the country through unwarranted strikes, limited production and unsound shop practices are suffered by labor and capital alike and seriously hamper the prosperity and progress of the whole country.

## Alabama Operators with "Blue-Book" Contracts Face Strike

OFFICIALS of District 20, United Mine Workers, have issued a call for a conference between the union and those operators who have signed the so-called "Blue-Book" contracts. It is asserted by the union that these operators have never put into full effect the award of the Bituminous Coal Commission and that they have in other ways failed to fulfill the agreements. The union desires to negotiate directly with the operators and to secure contracts which will supersede those now in effect.

The present agreements were made between the men and their employers, and they provide for union representation on the committees formed for final adjustment of disputes. These agreements were approved by officials of District 20 and are in effect from April 1, 1920, to March 31, 1922. Only two large operations signed the "Blue-Book" contracts and it is reported that mine owners entering into these agreements will insist that they be observed. The indications are that all the men working under "Blue-Book" contracts will be called out on strike.

## President Lewis Wants Legal Action to Compel Collective Bargaining

ARGUING that under the war powers the President of the United States can compel the operators to grant the starving strikers of Alabama the right to bargain collectively, President Lewis addressed a letter Oct. 24 to Mr. Wilson asking him to direct "the Department of Justice to institute such legal proceedings as may be necessary to compel observance of collective bargaining and the protection of the civil rights of the mine workers of Alabama." Mr. Lewis avers that the right of collective bargaining was guaranteed the miners and all other workers during the war in the President's proclamation of April 8, 1918, and that the same right is pledged in the Democratic national platform. Mr. Lewis appears to believe that the United States is governed not by law but by proclamation and party platforms.

FREDERICK VAN NUYS, U. S. Attorney, and L. Ert Slack, Special Assistant U. S. Attorney in Indiana, will go to Washington within the next two weeks, where they will confer with A. Mitchell Palmer, Attorney General, regarding the trial of 125 bituminous coal operators and miners before Judge A. B. Anderson. The trial has been set for Nov. 8. Removal proceedings against defendants living in districts outside Indiana have not yet been completed and probably will not be before Nov. 8, but it is thought that the trial will not be delayed.

ASSUMING JURISDICTION, THE Colorado Industrial Commission has ordered the leaders of United Mine Workers, District 15, and operators of the lignite field to appear Nov. 4 for a hearing regarding demands made by the miners for a 20-per cent increase for deadwork and a working agreement with the mine owners. Until the commission has heard both sides and rendered its decision, which is persuasive but not binding, the 3,000 miners will not be allowed to participate in a general walkout.

HEARING IN THE case of the Chicago-Springfield Coal Co. vs. the Illinois Central, scheduled for Oct. 26, was canceled and reassigned for hearing Oct. 28 at Chicago before Examiner Bardwell.



## Urge Metal-Mining Man as Successor to Dr. Cottrell as Mine Bureau Chief

WHEN Dr. F. G. Cottrell accepted the directorship of the Bureau of Mines, less than a year ago, it was generally understood that it was his desire to be relieved from the position at an early date. His selection to direct the chemical work of the National Research Council stimulated his desire to resume chemical research work.

Since then there has been considerable discussion as to the type of man who should direct the activities of the Bureau of Mines. There has been strong pressure behind the suggestion that this position should go to a metal-mining engineer who has had successful experience as a commercial executive.

Chemists particularly take issue with the claim of the metal-mining industry. They see no reason why a chemist with executive ability cannot guide the Bureau of Mines as well as can a metal-mining engineer. The petroleum industry is being served by the Government in a technological way by the Bureau of Mines only. As the petroleum division of the bureau is an important part of this work, that industry sees no reason why a petroleum technologist should not direct the bureau's work.

The coal-mining industry, it is pointed out, perhaps has even a greater claim on the position than has any other of the industries, as the volume of work done for the coal industry is greater than that done for any of the other industries. In view of the controversy about the matter, the latest suggestion is that Dr. Cottrell may retain the position until there is more accord as to who should succeed him.

## Bituminous Output of Pennsylvania in 1919 137,058,500 Tons; Value \$327,475,400

BITUMINOUS coal having a value of \$327,475,400 was mined in the soft coal fields of Pennsylvania during the year 1919, according to a report submitted Oct. 27 to James F. Woodward, Secretary of Internal Affairs of Pennsylvania, by M. Hoke Gottschall, chief of the Bureau of Statistics and Information in the Pennsylvania Department of Internal Affairs.

The mine workers during the year mined a total of 137,058,500 tons of bituminous coal and were paid a total wage of \$196,024,700, or approximately 60 per cent of the value of the state's bituminous output.

According to a report on the mineral resources of the United States in 1919, issued in September by the U. S. Geological Survey, it is estimated that bituminous coal production in Pennsylvania last year was 145,300,000 tons. The figures announced by the Pennsylvania Department of Internal Affairs, however, are based on actual production and have been tabulated from reports made to the statistical bureau of the department by the mine operators themselves. The actual production, therefore, it is seen, does not come up to the production that had been expected by the U. S. Geological Survey.

During 1918, records in the State Department of Internal Affairs show, 161,050,300 tons of bituminous coal were mined in the state, or approximately 24,000,000 tons more than last year, notwithstanding that there were almost 2,000 less employees in 1918 than there were in 1919. In 1918 the mine workers were paid \$226,055,600 and the coal mined was worth \$407,585,200.

Statistical records of the Department of Internal Affairs show that there were 1,106 bituminous coal operations in the state during the year against 1,077 in 1918, the greatest number being found in Cambria County, where 136 were reported. The average number of days the mines were operated in the various soft-coal counties varied considerably, the records showing that the mines in the entire field were operated an average of only 193 days. The highest average of days worked is shown in the report for Lawrence County, where mine workers were engaged an average of 284 days. In Mercer County the mine workers worked an average of 158 days, while in Tioga County the average was 170; in Armstrong, 172; Blair, 178; Clarion, 173; Clearfield, 177; Greene, 176, and Center, 175. The

average number of days worked in the other counties ranged from 182 in Bedford County up to 211 days in Allegheny County and 215 days in Fulton County.

Although the greatest number of operations was found in Cambria County, the greatest number of persons engaged in bituminous-coal mining was found in Fayette County, where the payrolls carried the names of 25,328. There were 20,536 employed in Westmoreland County, 18,801 in Washington County, 10,801 in Clearfield County, 19,487 in Cambria County and 14,950 in Allegheny County. In Lycoming County there were only twenty-five persons engaged in the soft coal industry.

In the value of coal mined Fayette County led all the other counties in the soft-coal field with a production value of \$59,641,500. Second in line was Westmoreland County with a valuation of \$51,434,300, while the third position was taken by Cambria County with a valuation of \$41,631,500. Lycoming County was at the bottom of the list last year with a valuation of but \$34,400.

In the entire bituminous field there were 153,207 persons engaged last year, while in 1918 there were 151,455. Of the 1919 total 91,266 were foreigners, 59,330 were Americans, white, and 2,611 were Americans, colored, the figures showing that American workmen represented only about 40 per cent of all the persons employed.

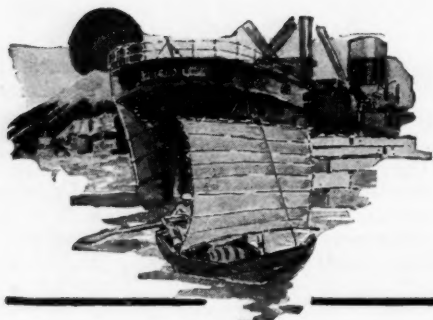
A table showing the number of persons employed in soft-coal mining in the various bituminous counties, the amount of wages they were paid and the value of the production, follows:

County	No. Employed	Amount of Wages	Tonnage	Value Produced
Allegheny	14,950	\$18,160,500	13,372,200	\$30,725,200
Armstrong	5,451	6,122,900	4,125,400	10,830,100
Beaver	121	144,400	156,600	187,300
Bedford	1,111	1,167,100	621,400	1,670,900
Blair	182	161,800	97,900	285,600
Butler	1,595	1,702,300	931,400	2,253,800
Cambria	19,487	2,230,000	15,579,400	41,631,500
Center	1,591	1,838,100	1,032,700	2,941,100
Clarion	1,763	1,934,200	1,117,800	2,794,100
Clearfield	10,801	11,847,400	7,399,100	19,754,200
Clinton	352	448,800	286,900	719,200
Elk	1,150	1,280,300	731,500	1,888,100
Fayette	25,328	35,302,400	28,113,700	59,641,500
Fulton	49	45,000	27,300	68,200
Greene	968	1,278,100	903,300	2,063,500
Huntingdon	1,461	1,446,200	823,800	2,392,500
Indiana	9,714	11,185,300	6,982,400	18,278,800
Jefferson	4,834	5,231,100	3,310,400	8,535,500
Lawrence	151	195,800	93,900	234,700
Lycoming	25	22,100	8,500	34,400
Mercer	802	790,600	446,100	1,196,100
Somerset	10,852	14,683,400	9,366,500	25,770,500
Tioga	1,132	1,121,400	513,200	1,555,800
Washington	18,801	24,559,000	18,810,900	40,588,800
Westmoreland	20,536	29,126,500	22,246,200	51,434,300

## Red Jacket Company's Injunction Delayed

OWING to the time consumed in arguing the granting of an injunction in the Lever Act cases, no time was left to hear the argument on the injunction sought by the Red Jacket Consolidated Coal Co. from the Federal Court at Huntington which came to an end on Oct. 15. The Red Jacket company applied to the United States District Court about Oct. 1 for an injunction to restrain the United Mine Workers from organizing the miners employed at the Red Jacket mines, notices of the injunction being served on John L. Lew's, president of the United Mine Workers; "Mother" Jones and others. It was expected however, that the Federal court would pass upon the application for an injunction during its session at Bluefield, W. Va., which began on Oct. 19.

**Scope of Proof in Personal Injury Action.**—In a suit to recover for injuries sustained by plaintiff in a gas explosion while he was at work in defendant's mine, it was improper for the trial judge to receive evidence tending to show negligence on the part of the defendant in permitting air courses to become and remain obstructed, or in failing to properly regulate the firing of shots in the mine, where there were no allegations of such negligence in the petition filed by plaintiff in the suit. (*Kentucky Court of Appeals, Turner vs. Daniel Boone Coal Co., 205 Southwestern Reporter, 931.*)



## Foreign Markets and Export News



### New South Wales Produces Nearly Half Million Tons of Coal in a Month

According to a cablegram received from the American consul at Newcastle, New South Wales, the total amount of coal mined in New South Wales, Australia, during the month of September was 468,000 tons; 117,600 tons, valued at £100,868, were exported overseas, excluding 3,217 tons for bunkers to oversea vessels; the remainder was for Australian consumption. On Sept. 27 the price of all coal was raised 4s. per ton. Supplies are not equal to demands. Freight rates are as follows: 90 to 120s. to the West Coast, the rate being regulated according to the ports and charter-party conditions; \$12 United States gold to Manila and \$10 to Honolulu. Seven American vessels awaiting coal cargoes were in port the day the cablegram was sent.

### British Colliery Strike Causes France to Seek Coal In Other Countries

French factories in which thousands of workmen are employed on Oct. 18 faced the possibility of having to close down because of the British coal strike. Until the embargo against exportation of coal stopped shipments England sent France three-quarters of a million tons monthly.

France may turn to China for more coal in the event of inability to get it in the United States. China, according to advices, has already contracted to furnish 100,000 tons of coal to France, 10,000 tons to Denmark and is offering 200,000 tons more for delivery in Europe.

India is said to be sending coal to France, Italy and Egypt, while South Africa has also been exporting to Egypt and Italy. Coal from Australia has reached Scandinavia.

### Industrial Conditions and Germany's War Debts Cause Fuel Shortage in Denmark

Industrial conditions in Denmark, according to Maurice P. Dunlap, American Consul at Copenhagen, are such as to emphasize the lack of sufficient fuel and the general need of a future reliable market for coal. The source of cheap coal supply before the war was Germany, but whereas about 100,000 tons were formerly imported per month only about one-fourth of that quantity was being imported in the beginning of 1919, and by April the figure had fallen to about 4,000 tons. Later it averaged about 15,000 to 20,000 tons a month. The price on the German article had, however, gone much higher than the price on English coal, so that Germany is becoming a negligible quantity as a source of supply for fuel.

Denmark received from England about 125,000 tons in January and 135,000 in February, which amount went to 260,000 tons in June and 280,000 in July. It then seemed that the great problem was solved, for theaters and restaurants were permitted to remain open longer and the war-long rationing of coal was partly dispensed with. August put a sudden end to prospects, as a strike occurred in England and the rise in the value of English currency made matters worse. During the rest of the year coal imports from England averaged about 100,000 tons and the former rationing had to be resorted to.

A small coal import from Belgium may indicate future possibilities. This in July amounted to 30,000 tons, but this source is for the time being closed by export restrictions from Belgium.

America as a coal market is still one of the big after-the-war possibilities that has not materialized. There have been about 10,000 tons of coal shipped to Denmark from the United States every month since June, an almost negligible quantity. But Sweden and Norway have received larger amounts from America and the United States may still become a competitor with England for the Danish market. Labor conditions and freight rates will play an important part in the ultimate course of this commerce, factors at present so variable and uncertain that it seems quite impossible to prophesy what this course will be. Denmark's minimum coal consumption can at present be reckoned at from 200,000 to 250,000 metric tons per month.

### After a Period of Firmness Foreign Freight Rates Soften

According to W. W. Battie & Co.'s coal trade freight report, the freight market on coals to European and South American ports has been firmer during the last week, but freights are beginning show a softening tendency. West Indian freights also are easier. Tonnage is offered freely to carry coals to all destinations.

Freight rates by steamer are as follows:

		Tons Dis- charged Daily
Malmö.....	About \$13.50	1,000
Copenhagen.....	About 13.50	1,000
Stockholm.....	About 14.00	800
Göteborg.....	About 13.50	1,000
Antwerp/Rotterdam.....	9.50—10.00	1,000
Hamburg.....	About 12.00	1,000
French Atlantic (ex Rouen).....	11.00—11.50	700
Algiers.....	About 13.50	800
West Italy.....	About 13.50	1,000
Marseilles.....	About 13.50	1,000
Piræus.....	About 14.00	1,000
Trieste/Venice.....	About 15.50	1,000
Port Said.....	14.00—15.00	1,000
Constantinople.....	About 15.50	500
Gibraltar.....	About 13.00	1,000
Pernambuco.....	About 13.50	500
Bahia.....	About 13.50	500
Rio.....	About 13.25	1,000
Santos.....	13.75—14.00	600
Buenos Aires or Montevideo or La Plata.....	About 13.00	750
Para.....	About 13.50	500
Rosario.....	About 13.75	750
To Nitrate Range.....	9.00—9.50	750
Havana.....	About 6.00	500
Sagua or Cardenas.....	About 7.50	300
Cienfuegos.....	About 7.50	500
Caibarien.....	About 7.50	300
Guantanamo.....	About 7.50	500
Manzanillo.....	About 8.00	300
Bermuda (p. c. and dis. free).....	About 7.00	300
Kingston.....	About 8.50	400
Barbados.....	8.00—9.00	500
St. Lucia.....	8.00—9.00	500
Santiago.....	7.00—7.50	500
Port of Spain, Trin.....	8.00—9.00	500
Curacao (free p. c.).....	8.00—9.00	500
St. Thomas.....	About 8.00	500

All above rates gross form charter.

### Italian Commission Denies That Business in This Country Will Be Placed Through London

Reports having become current in shipping circles that all business of the Italian Government Commission in this country would be transacted through London, Signor Quattrone, representative of the commission in New York, cabled the Italian Government for confirmation of the rumor. In reply he received a dispatch from Signor Sitta, Italian Under Secretary of Transports, flatly denying that such business would be transacted through London. The false report is said to have emanated from London.



## More Reasonable Prices and Improved Distribution Result from Cleveland Meeting

**T**ELEGRAPHIC reports to *Coal Age* from every coal field indicate that the movement to eliminate exorbitant prices and other bad practices in the distribution of bituminous coal is bearing fruit. Following the Cleveland meeting of Oct. 26, at which the whole industry gave its sanction to the drive for lower prices, nearly every field has speeded up the machinery for bringing into line those who had not already read the handwriting on the wall.

From Colorado comes the report that the operators will support the Cleveland fair-price committee movement but that their prices have at no time been out of line.

The fair-price committee formed a few weeks ago at Chicago at the request of the District Attorney, composed of two operators, two wholesalers, and two retailers, has the coal situation well in hand. While no committee has been appointed as a direct result of the Cleveland meeting of the National Coal Association practically all responsible operators are following the plans outlined at the meeting relative to bringing the coal industry in the Middle West back to more normal conditions. During the last week the coal market has been much easier in spite of the fact that car supply has dropped from between 70 and 80 to around 60 per cent.

### CLEVELAND COMMITTEE AT WORK OCT. 26

The Cleveland group appointed a Fair-Practice Committee composed of S. H. Robbins, C. E. Maurer, Whitney Warner, Thomas K. Maher, Michael Gallagher with D. F. Hurd, as secretary, which was in action the day of the national meeting in that city. A circular was sent to all operators in northern and central Ohio and to all local jobbers and retail dealers stating that:

In order that effective steps may be taken to secure a supply of coal for the domestic consumers and public utilities of northern Ohio at reasonable prices, in accordance with the request of the Attorney General of the United States and U. S. Attorney Wertz, and in line with the action taken at the meeting of the coal operators held at Cleveland, Ohio, on Oct. 26 all available means will be taken to eliminate any and all practices that may be found that tend to increase the price of bituminous coal to the consumer, and to take any steps that may be legal to prevent unreasonable charges.

The public should understand that this committee has no right to fix prices, nor will it attempt to do so.

If any dealer or consumer of bituminous coal feels he is being asked unreasonable prices and will acquaint the committee with the fact, such information will be given to the Department of Justice with the names of the offending individual or corporation, in order that this department of the Government may take such steps as it may deem advisable.

There is a general feeling in Cleveland that few complaints will be received by the committee for the reason that the cause of the trouble has already been and will in future be eliminated through the voluntary action of the operators, jobbers and retailers themselves.

With prices of steam grades tumbling and Lake priority off, coal men of Columbus generally believe that the law of supply and demand will regulate prices of domestic lump. All action taken toward supplying dealers with stocks have not contemplated any price fixing or any campaign to regulate quotations. The psychological tendency is downward and coal is leading in this movement. The larger operators have been ready to co-operate in reducing prices to more reasonable levels and this factor will be more in evidence as Lake shipments are not required of the producers. Some operators with large tonnages have never quoted lump coal over \$4.50 to \$5 and that seems to be the level to which prices are going.

At a conference held in Columbus Oct. 27 and 28 between B. F. Nigh, secretary of the Michigan-Ohio-Indiana Coal Association; W. D. McKinney, commissioner of the Southern Ohio Coal Exchange; J. D. A. Morrow, vice-president of the National Coal Association; C. C. Marshall, chairman of the Ohio Utilities Commission; A. G. Gutheim, manager of the car service division of the American Railway Association and others it was decided to inform dealers in the three states named that in case of emergency cars of coal will

at once be started to the locality in case B. F. Nigh is notified of the situation.

Messrs. Morrow and Gutheim stopped off in Columbus on their way from the Cleveland conference in order to get first-hand information of the situation in that section. They were informed that the smaller towns are in the worst shape as to coal supply, as the dealers in those places had not purchased coal at the prevailing high prices. They also were told that many school districts in Ohio were entirely without fuel.

### ST. LOUIS PRICES BASED ON LOW ILLINOIS RATES

From St. Louis comes the report that no action will be taken as a result of the Cleveland meeting because retail prices of coal in St. Louis are based on the low circular prices of Illinois operators, which do not exceed \$4.50 per ton at the mines as a maximum and \$3 as a minimum. Coal prices in St. Louis are more reasonable than at any other place in the country under similar conditions and there has been no complaint and no action deemed necessary to change prices there. Retailers have just finished a cost survey of doing business and report that their margin of profit is below what they are justified in receiving.

Sufficient time has hardly elapsed since the meeting of the bituminous coal operators of the country at Cleveland to mature plans for the creation of special committees to handle the distribution of coal to consumers and to correct any abuses which may have crept in, either in the southern West Virginia fields or in the northeast Kentucky and southwest Virginia fields although in all the fields mentioned the advisability of creating committees of the character described is under consideration by operators.

Plans for the formation of such committees appear to be somewhat further advanced in northeast Kentucky and in Virginia. While no definite action has so far been taken by the northeast Kentucky district. The Northeast Kentucky Operators' Association will hold a meeting on Nov. 9, at which time it is stated the kind of a committee suggested at Cleveland probably will be appointed. No formal action had been taken during the last week of the month in the Virginia field but it is understood that a meeting of Virginia operators will be held during the first week of November when a fair-practice committee will be named in accordance with the action taken at Cleveland.

In neither the Logan, Kanawha nor Williamson field had any definite action been taken looking toward the creation of special committees up until Oct. 30 and it is not possible to say just what action will be taken in those fields though it is considered possible that such committees will be appointed.

The situation with reference to the four smokeless fields of New River, Winding Gulf, Pocahontas and Tug River is perhaps different from that of any of the other fields in the country in that a special committee has been functioning for several months in co-operation with the Government. It is not thought that it will be necessary to appoint special committees in the four regions named, as virtually all of the coal in such fields has been contracted for for a long time and the operators of those fields have been taking care of the needs of nearby towns and have also contributed liberally to cities in Virginia and the Carolinas as well as furnishing their share of coal for the Government. Pocahontas operators are considering the situation and will determine later whether the necessity exists for a fair-practice committee.

### RETAIL ASSOCIATION REPUDIATES PROFITEERS

The National Retail Coal Merchants' Association recognizes that coal prices are necessarily high, but that some are too high. While admitting that, unfortunately, there are a few undesirables in the coal trade, the organization repudiates them, announcing that any complaint which proves upon investigation to be justified will result in can-

cellation of membership, so far as that organization is concerned, and denial of all benefits or protection.

In indorsing the action of the conference at Cleveland, the retail merchants' association reiterated the following from a declaration of principles adopted at their annual convention in Detroit, June 12, 1920: "The merchant who stoops to take unfair advantage of consumers by profiteering in seasons of great demand or in other emergencies has no honorable place in the business world, and is hereby declared undesirable as a member of the National Retail Coal Merchants' Association and its affiliated associations."

### Sales Realization \$3.44 a Ton; Margin, 74c.; Suspend Trade Commission Bulletin

IN ISSUING its sixth monthly bulletin on bituminous coal costs covering June, 1920, the Federal Trade Commission on Nov. 1 announced the suspension of its publication.

The average sales realization of the 555 operators reporting to the commission for June was \$3.44 per ton; total reported f.o.b. mine cost was \$2.70. Of the latter amount \$2.02 represented labor costs per ton; 31c. the cost of supplies, and 37c. general expense (or overhead). The difference between the sales realization and the f.o.b. mine cost per ton is the "margin," which was 74c. per ton. The commission emphasizes the point that the "margin" is not the same as profit.

The commission also points out that these average figures for companies in all parts of the country should not be considered applicable to any one region or district because of marked variation in costs and sales realizations due to quality of the coal and market conditions. The bulletin, therefore, gives figures for six general competitive regions of the country and also for sixty-eight of the seventy-four districts in twenty-four coal-producing states.

Comparable information is shown for the first three months of 1920 and the year 1918, and also for May, 1920. The number of identical operators covered in the comparison between June, the first three months of 1920, and the year 1918 is 448, and 535 identical operators are covered in the comparison of June with May. The average working time of the mines of the 535 operators in May was only seventeen days as against nineteen in June. The sales realizations of the 535 operators increased from \$3.23 per ton in May, 1920, to \$3.43 in June, while their total reported f.o.b. mine cost decreased from \$2.72 per ton to \$2.69, and their resultant margin consequently increased from 51c. per ton in May to 74c. in June.

The increase in reported cost of the 448 operators in June, 1920, over 1918 was 30 per cent, while their production in June fell 12 per cent below their average in 1918. Their absolute amount of reported margin in June, 1920, was 47 per cent more than in 1918, though the commission warns that the amount of investment may have been appreciably different at the two periods, that the month of June is usually more favorable than the average month for production at low cost, and that the 448 operators may not be representative of those that did not report.

On the other hand, in twenty-one districts (principally west of the Mississippi) 114 companies reported lower margins per ton in June, 1920, than in their average month in 1918, and as a group produced less coal (1,523,060 tons in June as against a monthly average of 1,886,000 in 1918). These twenty-one districts were: Alabama No. 1 (Big Seam) and No. 4; Arkansas, Excelsior-Logan; Colorado, Lignite; Illinois, No. 1; Iowa, all districts; Kansas, all districts; Kentucky, No. 2; Missouri, all districts; Montana; New Mexico, all districts; Oklahoma, all districts; Texas, bituminous; West Virginia, Kanawha; and Wyoming.

The increase in total mining cost in June as compared with the first quarter of 1920 and with the average for 1918 is explained as chiefly due to decreased production in June as compared with the other two periods and the two awards increasing the wages of mining labor, one of 14 per cent effective in November, 1919, the other of 27 per cent (including the previous 14 per cent advance) effective April 1, 1920.

### Coal Exported in September

EXPORTS of bituminous coal from United States, as reported by the Bureau of Foreign and Domestic Commerce, reached a total of 4,011,424 gross tons, a decrease of nearly 100,000 tons from August. Canada, the largest importer of our coal, is shown by these figures to have received 1,763,246 gross tons in September compared with 1,867,006 tons in August, and the decrease is, therefore, in shipments to that country, and not in sea-borne shipments.

Shipments to Denmark fell off nearly 100,000 tons, while those to France more than doubled, nearly half a million tons having been shipped to France in September.

Countries	Anthracite		Bituminous	
	Gross Tons	Value	Gross Tons	Value
Azores and Maderia Is. ....			2,491	\$37,372
Belgium .....			24,101	305,608
Denmark .....			176,531	2,600,476
Finland .....			6,071	94,100
France .....	5,278	\$99,494	449,704	5,960,274
Germany .....			7,777	116,600
Gibraltar .....			20,011	225,318
Greece .....	12	180	30,216	393,469
Italy .....			150,580	1,487,921
Netherlands .....	7,079	45,000	290,786	4,367,905
Norway .....			90,937	1,324,776
Portugal .....			8,364	76,721
Sweden .....	3,506	27,860	144,502	1,825,858
Switzerland .....			51,667	754,109
Tueky in Europe .....			20,573	285,905
Bermuda .....			1,643	13,883
British Honduras .....			46	534
Canada .....	297,064	2,901,275	1,763,246	11,844,456
Guatemala .....	1	40	1	24
Honduras .....			1,782	16,172
Nicaragua .....			134	1,205
Salvador .....			2	35
Greenland .....			402	6,432
Mexico .....	428	5,158	15,847	114,028
Newfoundland and Labrador .....	861	9,444	6,259	81,122
Barbados .....			3,179	32,590
Jamaica .....			11,119	107,269
Other British West Indies .....			5,121	57,382
Cuba .....	4,177	55,413	125,156	1,532,579
Dutch West Indies .....			11,454	127,775
French West Indies .....	6,284	116,244	5,311	68,902
Dominican Republic .....			2,040	36,720
Argentina .....	98	1,819	276,680	3,551,431
Brazil .....			135,561	1,761,025
Chile .....			38,007	529,196
Colombia .....			1,334	11,666
British Guiana .....			2,848	22,930
Dutch Guiana .....			200	1,610
Peru .....			3,012	45,187
Uruguay .....			48,549	796,069
Russia in Asia .....			3	84
New Zealand .....			5,996	95,936
Canary Islands .....			2,092	41,840
French Africa .....			12,581	201,087
Egypt .....	446	7,146	57,408	663,062
Totals .....	325,234	\$3,269,073	4,011,424	\$41,618,670

### Urge Supreme Court to Advance Hearing of Lambert Run Appeal

THE U. S. Supreme Court was requested by counsel for the Lambert Run Coal Co. on Oct. 25 to advance for early hearing its case against the Baltimore & Ohio R.R., from the Circuit Court, Fourth Circuit, which involves the construction of paragraphs 12 and 15 of the Interstate Commerce Act, covering distributive share of mines in the matter of coal cars. It is pointed out that because of conflicting opinions of lower courts as to whether a statute or a regulation of the I. C. C. governs, early action should be had by the court on the interpretation of the matter in view of its public importance.

### Strike in Northern Colorado Coal Fields

APPROXIMATELY 2,000 mine workers in thirty northern Colorado lignite mines walked out last Thursday to compel the operators to recognize the union. This cut off about 75 per cent of the coal needed for Denver's daily consumption.

The State Industrial Commission is investigating to find out who is to blame for this strike, which is alleged to be in violation of the law that requires thirty days' notice before a suspension of work. A daily fine of \$50 must be paid by those who violate the law, and fear of consequences is causing several hundred strikers to leave for Wyoming and Utah. The men want not only union recognition but a 20-per cent increase for daywork. This the companies are ready to consider.



## British Make Scale that Slides Up and Down with Output of Coal

SETTLEMENT of the big coal strike was reached Oct. 28 between the representatives of the government and the strikers, but not until the result of the ballot of Tuesday, Nov. 2, is reached can it be told whether the mine workers themselves will accept it, though endorsement is expected with a resumption toward the end of the week.

The agreement reached gives the miners an immediate increase in wages of two shillings (or 48.7c., at standard rates of exchange) per day. A plan is provided for an investigation of wages throughout the industry with the purpose of a complete reclassification by March 31, 1921. Thereafter wages will be fixed by a national wage board which will arrange a sliding scale that takes into consideration not only the output of the mines but the profits of the business, giving the workers a share in surplus profits. A lot of elaborate machinery is provided for adjusting wages between the present date and March 31, 1921. Many possible contingencies are taken into consideration in the terms of the suggested contract.

It is arranged that both coal operators and mine workers shall be penalized if the tonnage of last September is not maintained; the coal operators by a reduction in the 10 per cent share of the surplus profits and the mine workers by a reduction of sixpence (12c.) a day in wages, if the output does not come up to the September figures. There will be a reward of sixpence if the tonnage is exceeded, but apparently this is not distributed so broadly as the penalty, for there is nothing said as to an award to the mine operators should the output be exceeded.

The mine worker has been a chronic absentee, but he has quite generally thrust the blame for low tonnage on the operator. The workman complains that as he cannot control the machinery he should not be held responsible for the output. The British operator, like our own, is said to be restricting output, probably with as little reason.

Every increase of £228,000 above the revenue derived from mining in September is to entitle the mine worker to a rise in wage of sixpence. No fractions of £228,000 are to be considered as justifying an increase. The wages will be automatically adjusted Jan. 3 and again on Jan. 31 and thereafter every four weeks following the previous test period.

## Following Lifting of Service Order No. 10 Buyers Ask Price Concessions at Lakes

AFTER nearly a week of anxious waiting the Interstate Commerce Commission on Wednesday, Oct. 27, suspended indefinitely Service Order No. 10, generally known as the Lake priority order. Although far from the 30,000,000 tons of Lake coal so urgently demanded by the Northwest last spring can be shipped this season the condition of the market at Lake Erie ports and the requirements of the Middle West for domestic fuel have become such in the last ten days that the commission indefinitely suspended the order. It is understood that the dock operators are generally of the opinion that they have sufficient mine-run coal on hand or under contract for this season and they have lately been fearful that under a continuance of the priority order docks would be overstocked with slack and a repetition of the condition experienced last winter is far from their liking.

The fact that the railroads in the Northwest have purchased so heavily from Illinois is one of the reasons for the decrease in demand for Lake coal and for mine-run coal in particular. Accumulations at lower Lake ports up to the time of the suspension of the order were such as to cause a general feeling of uneasiness and a fear that H. M. Griggs would find it necessary, in his capacity of manager of the exchange, to embargo shipments from the mines. It is generally understood that Lake coal buyers will absorb all the prepared coal that will be offered the remainder of the season but that price concessions are being sought. The I. C. C. issued the following statement, announcing the suspension of the Lake order:

The Interstate Commerce Commission today suspended, until further order, its Service Order No. 10, entered July 20, 1920. That order was designed to give a preference in the use of coal cars to Lake Erie ports with the primary object of conserving equipment and movement needed to get an adequate supply of bituminous coal to the Northwest, by requiring a full utilization of the rail and lake routes during the season of open navigation. Simultaneously and continuously, a vigorous effort has been made to increase the supply of cars available for the loading of coal, which has been so successful that while during June the ratio of cars supplied to cars ordered was 62.2 per cent., it was in July 74.7 per cent, August 80 per cent and September 85.6 per cent. The following statement shows the daily average number of cars at the ports, and of cars dumped:

	Average at Port	Average Dumped
July .....	5,617	2,198
August .....	9,212	3,457
September .....	7,670	3,288
Oct. 1 to 26 .....	9,412	2,868

The demand for coal at the Lake Erie ports for transshipment by water to the head of the Lakes is now less than at any time

since Service Order No. 10 was promulgated. As a result there are extensive accumulations of coal at these ports and a large volume en route. Up to Oct. 26 there had been actually dumped into vessels at the lower Lake ports 18,572,518 tons, with 580,000 tons in cars at the ports awaiting dumping and approximately the same amount en route. We are assured that the customary lake suppliers will continue to ship their commitments to the lower Lake ports for transshipment without preference order from the commission. This year an unusually large amount of coal has already been moved to the Northwest by the all-rail lines. The production of coal and car supply have been considerably increased and are now considered ample to take care of the Northwest without a special priority order.

There is a shortage in the Central territory of coal for domestic use for which additional transportation must be supplied before cold weather sets in. The suspension of Service Order No. 10 should enable the mines and railroads to take care of that territory promptly and fully, and will make more fluid the movement of traffic throughout this territory, and also enhance the general car supply. Notice of the situation was given by the commission to representatives of the Northwestern States and to interested parties, and no information has been received from them which indicates that the continuance of the order is now essential.

The situation will, as in the past, be carefully watched, and should occasion appear for the further exercise of the commission's emergency powers, such action will be taken as the facts warrant.

As illustrating the improvement in the coal situation, attention may be drawn to the fact that since Oct. 15, it has not been found necessary to issue a priority order for any public utility or governmental agency, as the needs of such institutions have been taken care of out of the current car supply. The withdrawal of Service Order No. 10 leaves in force no priorities, except the general priority of coal over other traffic moving in open-top cars suitable for coal loading, and about 170,000 cars have been specially released from that priority order for the movement of building and road materials, and certain perishables such as sugar beets.

At a session of the Interstate Commerce Commission, Division 5, held at its office in Washington, D. C., Oct. 27, 1920, the following amendment to Service Order No. 10 was issued:

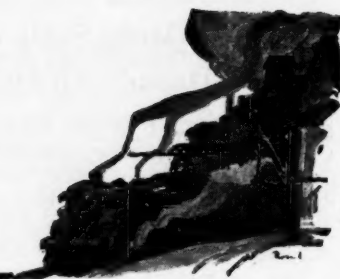
It appearing that present conditions so warrant and require:

It is ordered that the operation of Service Order No. 10, made and entered July 20, 1920, as amended, be, and the same is hereby, suspended until the further order of the commission, effective at midnight of this day, except as to coal delivered to a carrier for transportation and billed before that hour.

It is further ordered that copies of this order be served upon the carriers described in said Service Order No. 10 and that notice of this order be given to the general public by depositing a copy hereof in the office of the secretary of the commission at Washington, D. C.



# Production and the Market



## Weekly Review

**L**OOKING ahead of the present with its record output, fair-price and fair-practice committees, declining markets and general uncertainty, there is plainly discernible in the near future a period of slack demand for bituminous coal. The largest factor contributing to this situation is the recuperation of the railroads. The struggle for increased output of soft coal that began last April has had many setbacks throughout the summer, but has finally culminated in a performance of 2,000,000 tons a day throughout October with what amounts to a certainty that the railroads can now keep up this pace as long as may be necessary. Whether big production and ample supply or the fair-price movement started by Attorney General Palmer, or both, are responsible, prices are rapidly getting back to a steady base.

### PRESENT NEEDS CAN BE MET IN EAST AND MIDWEST

The lifting of the Lake priority order will result in coal being available in sufficient quantity for immediate needs at practically every point in the Middle West and the north Atlantic States, as it is estimated that fully two thousand cars of coal daily have been released by the raising of the Lake order. There still is some nervousness among public utilities companies, but few emergencies have developed. A large number of public-utility companies were without contracts other than those made for assigned cars, which of course are now inoperative.

It is understood that there is no intention of resuming the permit system for the use of open-top cars for the

use of industries other than coal, and that other industries will have to wait for cars until the coal situation is entirely cleared up.

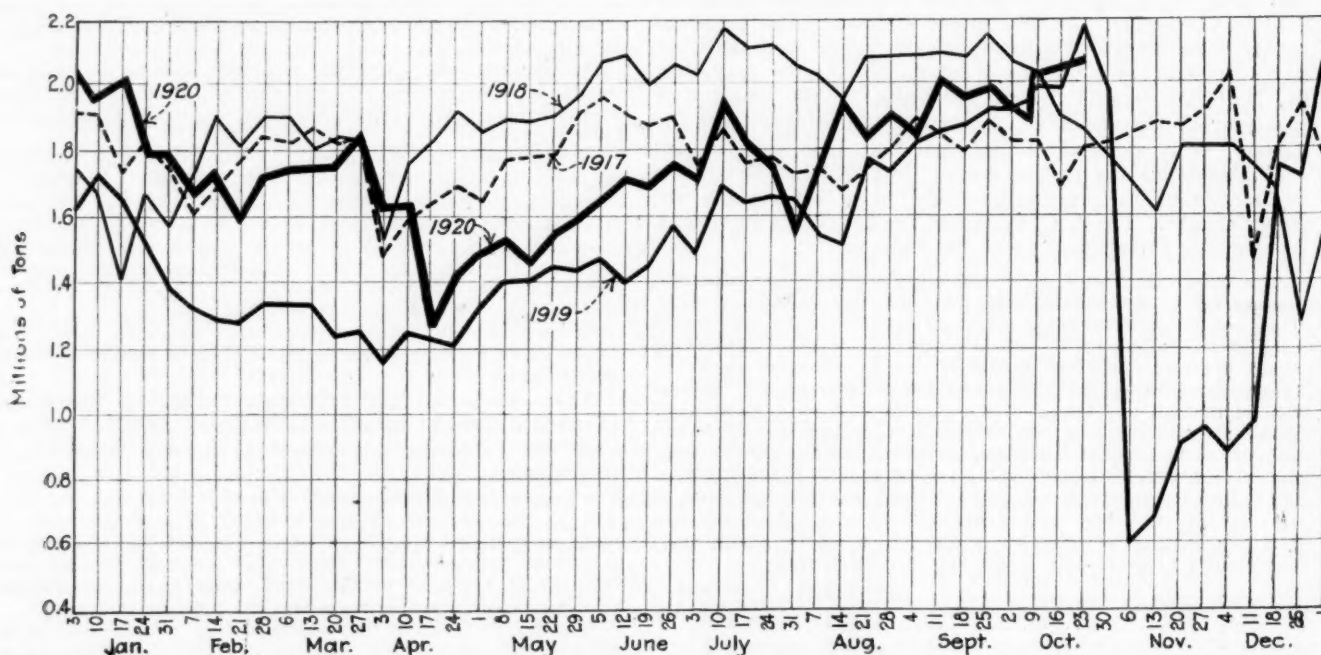
### BITUMINOUS

For the third week in succession production has exceeded the 12,000,000-ton mark. According to the Geological Survey, the output for the week ended Oct. 23 was 12,146,000 net tons, an increase compared with the preceding week of 45,000 tons and with preliminary reports indicating the same high rate the last week of the month. Production this year to date is now only 8,500,000 tons behind that of 1917.

The labor situation is good, losses from this source having decreased rapidly. Labor is returning in large numbers to coal mining from other industries where it had been lured by the fancy wages paid until recently. In the Thacker and Alabama strike sections production is steadily mounting with the return of old workers and an influx of new men, and in the face of fresh intimidating practices on the part of Thacker strikers. The eastern Ohio section is still disturbed, the men being dissatisfied over results of the recent strike and giving only very indifferent service. A few minor troubles and an indolent labor attitude are reported in the Belleville district. A strike is in effect in the Colorado lignite field, endangering the domestic coal supply of Denver.

A slow return movement of empties from Western points and congestion at Lake ports caused a shortage of cars in some sections of the northern and middle Appalachian regions. However, the supply was greatly improved, as a

Average Daily Production of Bituminous Coal\*



\*From weekly report of Geological Survey.



### Lake Coal Dumped Season to Nov. 1

(NET TONS)

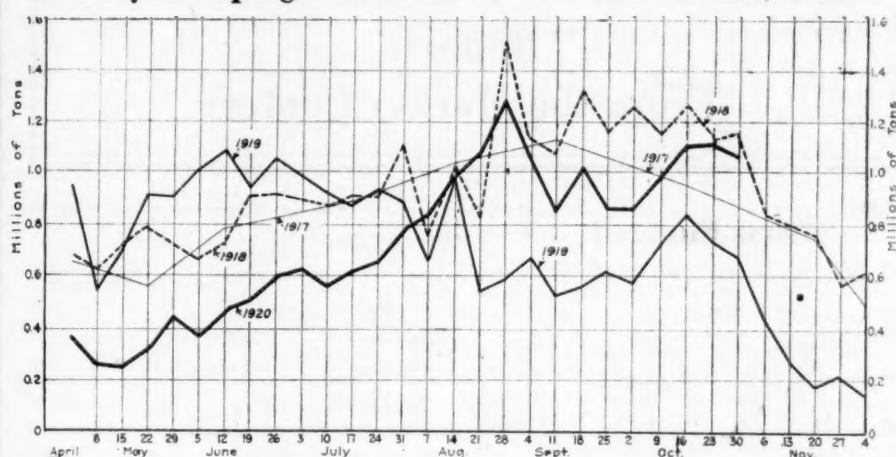
	1919	1920
Total	21,890,084	20,043,275

### Week of Nov. 1, 1920

Cargo	1,037,678
Fuel	43,597

Total	1,081,275
-------	-----------

### Weekly Dumpings, Bituminous Coal at Lake Erie Ports



whole, compared with the preceding week. The Midwest section had the best placement in many weeks although late reports show the car supply is again declining to about 60 per cent. Alabama mines had an adequate supply for all available output not affected by the strike. Kentucky operations are still hampered by the poorest supply of any section in the country, in some parts of the state producers getting only 30 per cent placement.

Prices declined sharply in the week ended Oct. 23. At the meeting in Cleveland operators took definite action toward lowering unreasonably high prices and discontinuing unwise practices in marketing bituminous coal. A general contraction of manufacturing activity also is having a decided effect on current demand.

#### PRICES WEAKER IN PRINCIPAL MARKETS

Fairmont quotations are unchanged—\$6@6.50 to conform to fair practice recommendations. The Pittsburgh district is greatly weakened; steam \$6 and by-product \$7@8. Pittsburgh No. 8 market is softer, ranging \$5.50@6.50. The New York market is weaker, with steam quoted at \$7.75 and ranging up to \$9.75@10.50 on the various pools. Philadelphia export market is \$14@14.50 f.o.b.; steam has declined to about \$8.50; Pool 34 is \$8. Baltimore quotations are firm at about \$10. Lake price is greatly reduced to around \$5.50@6. Columbus quotations show Hocking \$4.50@6.50. St. Louis prices are: Standard and Mt. Olive, \$4@4.50; Carterville, \$4@5.50 and independent quotations up to \$8. Louisville quotations are firm, \$6@8.50 with decline seen in greatly weakened demand. Alabama steam coal is off, domestic conforming to prices fixed by the state fuel administrator. Boston reports a very general slump in demand. Prices have been reduced to \$7.50@9.

Cars of bituminous coal dumped over Tidewater piers for the week ended Oct. 23 numbered 27,596, as shown in the following table:

Week Ended	New York	Philadelphia	Baltimore	Hampton Roads	Charleston	Total
Oct. 2	9,121	3,673	4,197	8,872	498	26,361
Oct. 9	9,304	4,188	4,242	9,587	375	27,697
Oct. 16	8,565	4,061	5,176	8,328	227	26,357
Oct. 23	9,856	4,194	4,675	8,531	337	27,596

According to the Geological Survey, Tidewater dumpings reached the high figure of 1,375,000 net tons. New England shipments still further declined and exports decreased somewhat. Bunker coal, however, increased 41 per cent, attributed to increased demand accompanying the British coal strike. The tonnage handled at Tide was destined as follows:

Destination	New York	Philadelphia	Baltimore	Hampton Roads	Charleston	Total Dumped
Coastwise to New England	75,000	14,000	26,000	79,000		194,000
Exports	1,000	125,000	186,000	340,000	12,000	664,000
Bunker	122,000	19,000	24,000	83,000	2,000	250,000
Inside coasts		42,000	21,000	11,000		74,000
Other tonnage	175,000	3,000		15,000		193,000
Total	373,000	203,000	257,000	528,000	14,000	1,375,000

All-rail movement to New England recovered again during the week ended Oct. 23, when 5,532 cars were forwarded through the five gateways, as compared with 5,163 cars during the preceding week.

Service Order 10 was temporarily suspended Oct. 27, when it became apparent that the Northwest could not absorb the heavy volume of tonnage allotted to it. On Monday preceding the suspension, 4,600 cars were loaded for the Lakes while accumulated cars at lower ports were reported at 11,666 on Oct. 28. Release of a considerable tonnage heretofore shipped on Order 10 will materially aid the domestic situation, although the sudden suspension caused some confusion to shippers trying to place this unexpected free coal. Docks at the Head-of-the-Lakes are reported as well up on run of mine, but willing to take a considerable tonnage of lump. The matter of price has become an issue, as dock companies hesitate to stock at figures which they feel will be materially reduced in the near future. Shipments to the Lakes during the period ended Oct. 30 were 1,081,275 net tons.

#### ANTHRACITE

Unbroken increase in shipments continued during the week ended Oct. 23, when 1,915,000 net tons were loaded as compared with 1,855,000 tons for the preceding period. Prices are firm, one large producer even advancing his quotations slightly. Independents continue to command premium figures. Demand is stronger than ever, while immediate diversion of a considerable supply to the District of Columbia is being urged. The fact that a shortage exists in the capital is giving the trade some concern and considerable pressure is being brought to bear to relieve this condition.

#### ANTHRACITE SCALE TO BE VIRTUALLY REOPENED

Miners' demands were presented by officers of the U. M. W. when operators and representatives of the mine workers met in Philadelphia, Oct. 26. These demands really amount to a reopening of the award and are quite a different thing from adjusting any inequalities of that award. It would seem that the present time is an illogical one to seek increased wages, with general price recessions on many commodities under full headway and while labor is less actively employed. Owing to the broad nature of the propositions an adjournment of the meeting was taken until Nov. 5.

#### COKE

Production declined slightly during the week ended Oct. 23, apparently because of slackening demand. The total output is estimated by the Geological Survey at 389,000 net tons, or a decrease of 14,000 tons, compared with the preceding week. Every district shared in the decrease.

Prices declined sharply, Connellsville furnace being quoted \$10 and foundry \$15. Still further declines are seen in the sluggish market; several furnaces are banking or blowing out and "discontinue notices" on requirement contracts are common.

## Reports From the Market Centers

### New England

#### BOSTON

*Market Softens Perceptibly—Operators Eager for Spot Orders—Prices Likely to Recede Further—Bunker Grades Available in Less Volume at New York and Philadelphia—Rail Movement Continues to Decrease — Anthracite Domestic Sizes in Heavy Demand.*

**Bituminous**—The past few days have witnessed a notably easier market for spot shipment, particularly medium and fair grades. Prices have weakened to the slack demand and there is an amount of fine tooth canvassing, such as the trade has not seen for many months. There is only a scattering inquiry for the most part on behalf of small plants and retail dealers. Many of the latter have accumulated stocks at higher prices and even they are making every effort to sell. The forecast today is for an extremely dull market for weeks to come.

Operators in central Pennsylvania are importuning their agencies by wire to move coal. Frequently of late cars have been loaded in advance of sale and in consequence an increasing amount of business is being done on offers.

Spot quotations are still well above contract figures although operators are just now passing to the consumer the cost of the wage increases. The cost of this at different operations varies from 20c.@30c. per net ton. It is well within possibilities, however, that there will be a marked slump in prices of the ordinary grades. Offerings are free at \$7.50 and producers will not stop at that figure if it is a question of keeping mines in operation.

Pier reports show less high grade, low-volatiles available for bunker and export. In fact, prices on the more favorably known grades are relatively firm; \$8.75 has been paid for Pool 10 within a few days and the range seems reasonably well maintained. Both at New York and Philadelphia there are cargo and bunker ships waiting sometimes for several days while special grades are accumulated.

Receipts at the Hudson River gateways as well as by water show a gradual decrease. Not only have manufacturers ceased buying, but they are actually at the point of declining deliveries on contract even when the shippers record hitherto this season has been unexceptionable. In this connection it is interesting to note that consignees in Boston & Maine R.R. territory have been embargoed in the aggregate 85 working days since April 1.

Quotations on bituminous at wholesale range about as follows:

	Clearfields	Cambrias and Somersets
F.o.b. mines, net tons	\$7.00@ 8.00	\$7.75@ 9.00
F.o.b. Philadelphia, gross tons.....	10.49@11.61	11.33@12.73
F.o.b. New York, gross tons.....	11.00@12.10	11.80@13.20

**Anthracite**—There is no abatement in the demand although it is foreseen that an easier situation is not so many weeks ahead. Retail dealers, in their exertion to meet popular demand, have filled a great many cellars through a free buying policy, taking coal at any price offered, and some time not late in the winter they will have accumulated all the odd sizes like chestnut and pea that there is any prospect of moving. This has regard, of course, for points where shipments this season have been fairly liberal and where it will be feasible to ship through December and January.

Certain of the steam sizes show a falling off in demand. This was only to be expected with the reversal of form suffered by the bituminous market. A widening market has been made for these coals, however, and more and more consumers are giving the use of them some study.

### Tidewater

#### PHILADELPHIA

*Retail Yards Continue Short—One Large Company Slightly Relieves Situation—Bituminous Local Trade Is Easier—Export Tonnage Big, but Permit Restriction Causes Drop in Gas—All Prices Tend To Shade Off.*

**Anthracite**—Shortage of coal in the retail yards continues and the only real change has been on the part of one of the largest operating companies, who on a few days this week made a distribution of a limited number of cars.

The retail trade reports that the demand made by consumers grows from day to day, despite the remarkably warm weather that has been experienced throughout the month of October. The consumer is also upset by the reopening of the wage conference and the report that the men will insist on 10 per cent more or stop work. If an increase in wages is allowed it is taken for granted that another boost in the retail prices will be in order and the public are wanting assurance that their orders will be filled without increasing the price. While there are varying retail prices throughout the city a good average at this time is \$15 a gross

ton for stove and nut, \$14.50 egg and \$12 pea.

There is nothing new to record in the steam trade, the demand for buckwheat and rice being fully up to the production. Most of the company buckwheat is selling for \$4.10@ \$4.25 to the regular trade, no one being willing to take on new business. Individuals are still able to get a premium of \$1@ \$1.50 on this size. Among the latter rice is selling about 50c.@75c. higher than company figure of \$3. Barley can be had from all shippers at \$2.25.

One of the largest producers increased the price of stove 10c. at mines to \$7.95 and pea 15c. to \$6.25, effective Oct. 21. All prices are still quoted as subject to change without notice.

For November, prices per gross ton at mines for line trade and f.o.b. Port Richmond for Tide are as follows:

	Line.	Tide.
Broken .....	\$7.35	\$10.05
Egg .....	7.60	10.25
Stove .....	7.95	10.60
Nut .....	7.95	10.60
Pea .....	6.25	8.65
Buckwheat .....	4.10	6.50
Rice .....	3.00	5.40
Boiler .....	2.50	4.90
Barley .....	2.25	4.65
Culm .....	1.50	3.90

**Bituminous**—With production approaching normal there is certain to be a softening in demand, which is quite evident in the local market at this time.

Of course, the British strike has done much to hold prices firm, although with port facilities working to their full capacity it cannot mean much in the way of increased business. It begins to look as if the export trade will be the real backbone of the coal business, where once it was merely an incident. Most of this business is being taken at \$14@ \$14.50 at Tide, per net ton.

In the local trade there is very little interest shown by the consumer to take in more coal than sufficient to meet current demand, plus moderate stocks. The hesitancy to buy has been particularly pronounced during the past week and is no doubt due to the Cleveland meeting sending forth the news that lower prices will likely prevail. On the best grades of Pennsylvania steam the prices have run \$9@ \$9.50, while some of the good coals were being offered around \$8.50, with some very ordinary coal at \$8. Wagon mine coal in box cars has recently been offered around \$7 and it would appear that this grade is fast approaching the point where it will be eliminated on account of production cost.

Export trade is in a way again feeling the restriction of permits, although this will not be felt in fullest force until another week, as heavy tonnages on former permits are now in transit. However, the fact that permits were more difficult to get had an almost immediate effect on the gas coals, and a price of \$8 was pretty generally in effect on spot deliveries, such as Pool 34, although from the Southern territory the price was at times \$1.50 stronger. Puddling coals, such as Greensburg, were also affected, these generally ruling \$7.75@ \$8.



## NEW YORK

*Increased Anthracite Shipments Put Trade in Better Frame of Mind—Situation Is Slowly Clearing—Considerable Reliance Is Placed in Conditions at End of Lake Season—Demand for Bituminous Slow—Quotations Fluctuate—Bunker Coals in Strong Call.*

**Anthracite**—With receipts showing a gradual increase and weather conditions remaining ideal the outlook is better than a week back. Demand continues urgent and dealers are distributing their coal carefully. Instances of where consumers have none in their bins are gradually disappearing.

At this time when certain industries are curtailing production, the reopening of the wage agreement and the new demands of the mine workers interest the trade and make most consumers feel uneasy.

Retail dealers have no difficulty in inducing customers to take any one of the prepared coals in case the size requested is not in stock, some dealers going to the trouble of delivering a few hundred pounds at a time.

Considerable reliance is being placed on the assurance that receipts after Lake shipments will have been ended will be sufficient to supply the market. At the same time it must be remembered that cities situated like Buffalo are in need of fuel and must also be taken care of. With the absence from the newspapers of glaring headlines depicting a near-famine in coal the public has quieted and is not now rushing to the retail yards for coal.

The demand on the smaller independent producer is not so strong. Retailers are not falling over themselves to get this coal at high prices. Those independents who have been asking the usual advance over the company schedules continue to easily dispose of their holdings. Quotations for the product of the smaller operators show a lower trend.

The steam sizes, with the exception of barley, are in good demand. Buckwheat ranges \$6.50 at the mine; rice \$4 @ \$4.25 and barley \$2 @ \$2.25. No change in price schedules from last week.

**Bituminous**—The local situation is comparatively quiet. There is plenty of coal coming forward to meet all urgent needs but consumers are not buying heavily. Many are waiting for lower prices as a result of the Cleveland conference while others point to full bins and believe there is a slump due.

Efforts of some shippers to obtain permits for assigned cars for some customers early in the week elicited the information from Washington that cars were not now being assigned but that efforts were being made to supply everyone. Car supply has taken a backward turn, some of the mines receiving about 50 per cent last week.

Early in the week reports from the regions were that the \$6 mark had been reached. Quotations as low as this figure were not heard here. Some grades were quoted \$7.75, but these were only temporary. There has been

a considerable changing of quotations during the week.

There is considerable coal moving for bunker purposes. The demand for export keeps going, a heavy cut in freight rates to Dutch ports being reported the middle of the week.

The Navy Department is receiving considerable coal over the local docks for down East shipment, this somewhat delaying the handling of coal for local delivery.

Toward the close of the week quotations at the mine for Pool 9 ranged \$9.75 @ \$10; Pool 10, \$9.75 @ \$10.25; Pool 11, \$9 @ \$9.25 and Pool 34, \$9.75 @ \$10.50.

At Tidewater, quotations were heard of Pool 10, \$14.50 @ \$14.75 f.o.b. docks, and \$13.75 @ \$14 for Pool 11.

## BALTIMORE

*Market Remains Fairly Firm on Best Grade Bituminous—Reports of Breaking Price From Other Quarters—Records Being Smashed by Export Business—Hard Coal Trade in Whirl Over Price at Mines.*

**Bituminous**—In the face of reports from various sources that a break has come in soft coal, the trading here has remained comparatively firm. This is specially true of the best grade coals, which are still commanding \$10 or better. That lesser grades are breaking somewhat is sure, however, and a rapid decline in this respect is looked for by many of the coal men here.

The strictly local situation is probably bolstered by the remarkable demand for export and bunker. In the former a new element was added the past week by the diversion to this port of a number of general cargo ships with orders to load coal for England because of the strike there.

From present prospects the total cargo loading at this port for foreign delivery for October will run close to 600,000 tons, the greatest by over 100,000 for any one month in the history of the port. For the first three weeks of the month the official figures show a loading of 470,000 tons. Since that time the daily average has been increased, and on last Monday the B. & O. pier at Curtis Bay broke its daily record for loading, when the pier dumped 1,082 cars.

**Anthracite**—The retail trade here is in a whirl over prices, due to the recent announcement of one of the largest dealers that he could not get coal without paying a premium of about \$3 at the mines and would therefore increase his prices to \$17 for popular sizes, or \$1.50 a ton above the schedule observed by members of the Baltimore Coal Exchange. The public is apparently not blaming the retailer, especially as he advised his customers "not to buy at the outrageous rate unless absolutely forced to do so," but there is a growing demand for some plan for equalization of hard coal selling at the mines which would protect against excessive premium charging.

Meanwhile, because dealers are in many cases refusing to buy the higher priced coal, very little supply is coming

in. The dealer who raised prices to \$17 for instance, announced that he still had 15,000 tons of orders on the books.

## Lake

## BUFFALO

*Prices Slump Further—Cars Are Fairly Adequate and Labor Is Better—Anthracite Demand Is Unabated.*

**Bituminous**—Just now prices seem to be dropping faster than ever. The Cleveland meeting of the National Coal Association seems to have broken down the last stand for high prices. Some startling figures have been made inside of a day or two, slack refused at \$5.50, gas coal at \$6, and the like.

It is now confidently expected that cold weather will see still lower prices instead of higher, if only because the decline has been delayed by the efforts of the seller, when the logical condition was for the bottom to have been reached months ago.

Pittsburgh lump sells for \$7.50 @ \$8 with slack \$2 lower and mine run fluctuating all the way between the extremes. Youghiogheny gas is \$10. All genuine gas coal, as well as smithing, is very scarce and smokeless is practically out of the market.

There are still some strikes in the Allegheny Valley and neighboring districts, but they are generally of a local character. The trade believes that it is not the policy of the miners to enter on any general strike, though they are still more or less restless and ready to take offense. The amount of coal produced appears to be in excess of consumption, which can have but one tendency.

Car supply is good and a surplus in most lines of the carrying trade is now reported to be accumulating. At the same time the big freight yards are generally cleaned up, showing that more efficiency has taken the place of more cars.

**Anthracite**—The demand is if possible more insistent than before, but the supply does not increase and is not expected to now. It is sufficient to last till the Lakes close. The retailers seem to have been careless or discriminating, for there are plenty of consumers with little or no coal, while many others have a winter's supply.

It seems as if the average consumer is bound to do the wrong thing or at least to listen to the wrong adviser. At any rate he gets the idea that there is not going to be coal enough for everybody and that if he gets any he must do something unusual, either tease his coal out of the regular retailer or pay an exorbitant price for it.

**Lake**—Shipments for the week were 92,300 net tons, of which 4,500 tons cleared for the Canadian "Soo," 14,500 for Milwaukee, 15,200 for Fort William, 22,800 for Chicago and 25,300 for Duluth and Superior. Vessels are so eager to go after wheat that coal shippers are short of tonnage. Rates are 60c. to Duluth, Fort Williams; 75c.

to Milwaukee, 85c. to Chicago and \$1.50 to the Soo.

**Coke**—Prices have come down sharply, mostly on account of the decline of coal. Standard 72-hour Connellsville foundry sells to jobbers at the ovens \$14.50@16; furnace \$13@14 and stock and off grades \$11@12. Domestic sizes are scarce at \$9 for chestnut and \$5 for pea.

#### MINNEAPOLIS

*Suspension of Lakes Priority Follows Congestion at Lower Ports—Jobbers Unwilling to Accept Coal at Higher Prices—Shortage Feared with Approach of Winter.*

The recurring hints of reduced prices have resulted in a cessation of buying at the Lower Lake ports. As a result, there was a quick piling up of coal sent there under priority order, which speedily began backing up and threatened congestion. The situation immediately brought down the wrath of those sections which had been barred by the priority order and the suspension of Service Order 10 followed. The Northwest was accused of failing to take the coal for which it had been so strenuously laboring.

The rumor of lower prices, with soft coal selling at retail up to \$15 in the Twin Cities, was a most alluring one, and very easy to believe by those who wished for cheaper coal. No one wanted to be caught with high-priced coal on hand. Orders fell off while awaiting development of the longed-for decline.

Judge McGee, who is the fuel commissioner for Minnesota, stated that consumers who wanted to be assured of coal for the winter must be prepared to pay the going price now. He pointed out that the remainder of the period of navigation was short and after that Eastern coal must come by rail. He added that the railroads of the Northwest had diverted their buying to the Illinois fields, where they could get coal on their own cars and in some instances hauled by their own locomotives, but that the ordinary consumer would have to take his chances of getting the same kind of coal after the railroad orders had been filled.

The whole situation is most unfortunate to develop at almost the close of navigation. The month of November is all that remains in which to load at the Lower Lake ports. Any delay in loading now means simply that much less tonnage for the docks. It is impossible to say whether there will be lower prices. Until the demand subsides or is filled, the high prices seem likely to be maintained by force of circumstances. A small decline made now would be more than absorbed in the greater freight charges which would accrue from having to ship coal all-rail from the Eastern mines. This has been done before, but it means a heavy cost under the prevailing freight charges.

A change to colder weather accompanied by snow in some parts of the interior, had the effect of starting anew

the demand for coal to the country, which will speedily help out the accumulation at the lower ports. In the meantime, valuable time has been lost and cannot be made up this season.

Many points in the interior of the Northwest have not had any coal shipped in for months. Some have had a single car or so, several weeks ago, but have not touched anywhere near their usual quantity for this date. When cold weather forces action in moving coal, it will soon show how long the limited dock supplies will last into the winter. Some members of the trade expect to see the stores on the docks down to almost nothing before December is over.

#### MILWAUKEE

*Market Is Quiet and Steady, with Prices Firm—Impending Investigation Causes Some Uneasiness — Winter's Outlook Is Somewhat Improved.*

Consumers hope for a slump in prices and many are holding back their orders, but dealers say there is no chance for a drop under prevailing circumstances. Wholesalers are disturbed over the coming investigation of coal conditions and prices by the state authorities. Attorney-General John J. Blaine has received complaints that handlers of soft coal are retaining stocks in their yards in order to accentuate the shortage idea and keep prices on the upward grade. This condition may obtain at points back in the state, but it is not apparent in Milwaukee.

United States District Attorney H. A. Sawyer rules that the holding of coal on track or in the yards in expectancy of a raise in prices constitutes a violation of the Lever act and will invite prompt action by the Federal authorities. Milwaukee coal men say they invite investigation.

Receipts of coal by Lake thus far in October foot up 112,556 tons of anthracite and 313,638 tons of soft coal, making the season's receipts 696,202 tons of the former and 1,780,038 tons of the latter. The port of Green Bay has received 453,483 tons of coal thus far this season, which is 50,000 tons less than the yearly average. More than 30,000 tons have been shipped from that port to Fox River Valley points during the past two weeks.

Altogether the outlook for this district for the coming winter does not look as bad as it did, and if rail transportation conditions are reasonably efficient during that period there should be no suffering.

#### CLEVELAND

*Operators Pledged To Eliminate Unreasonable Prices — Lakes Order Is Suspended—Prices Soften with Weaker Demand — Domestic Receipts Are Increasing.*

**Bituminous**—At an open meeting in Cleveland of the bituminous coal operators of the country, a resolution was passed to co-operate with the Department of Justice in bringing about more stable conditions in the industry. It was

further recommended at the meeting that each bituminous district establish a committee for the purpose of co-operating with the Department in an effort to eliminate unreasonable prices and practices.

Sagging prices and weakening demand continue in the local market as the result of industrial contraction. Many plants are either closed down or have reduced working time. Some operators are selling spot slack at \$4 a ton, but the prevailing steam price is \$6@7. The most drastic decline is in Lake prices. Coal men at the meeting would not forecast the speed nor the extent of the anticipated decline.

Car supply in the No. 8 district is improving the production although dissatisfaction among the miners is costing considerable tonnage.

**Pocahontas and Anthracite**—Declines in the soft coal market have not spread to Pocahontas and anthracite grades. Supply is still limited and despite mild weather, the public is anxious to accumulate its winter needs. However, receipts of coal are daily increasing; during September, domestic receipts averaged 28 cars daily; for the majority of October this averaged 38 cars, and now is running nearly twice that figure. Pronounced improvement is expected with increasing production and curtailed Lake shipments.

**Lake**—On Oct. 27, Service Order 10 covering Lake priority was temporarily suspended. Coal had been coming forward faster than it could be handled, and some congestion had resulted. The Northwest trade is reported well-stocked on mine run, apparently refusing to absorb further tonnage of this grade, although anxious to secure lump supplies at figures which are somewhat below the current market.

Retail prices of coal delivered in Cleveland are:

Anthracite—Egg \$16; chestnut and stove \$16.25.  
Pocahontas—Shoveled lump \$14; mine run \$12.50.  
Domestic Bituminous—West Virginia splint \$13.25; No. 8 \$12; Millfield lump \$12.50; cannel lump \$12.  
Steam Coal—No. 6 and No. 8 slack \$11.60; \$12; mine run \$12.50; No. 6 3 in. lump \$12.50.

### Inland West

#### INDIANAPOLIS

*Operators Ship Larger Tonnage for Indiana Consumption—Retailers Withdrawing Suits—Production Improves with Better Car Supply.*

A sudden reversal of form on the part of Indiana operators, following the Cleveland meeting, has led to a reduction in the price of coal for Indiana consumption. Approximately 50 per cent of the coal mined last week was shipped to points in the state.

All of the coal was sold at prices fixed by the commission, or at lower figures. The information was received by the commission in compliance with the order issued last week, requiring operators to make weekly reports concerning the production, distribution and



sale of Indiana coal. The fact that only a few of the 80 retailers who filed suit remain in a hostile attitude is having its effect on the trade in general.

Some contracts are being made by operators outside the state but the general disposition has been during the past week to obey the rulings of the commission, which would keep approximately 1,600,000 tons monthly in Indiana for domestic consumption. This is being done with apparent good grace in spite of the fact that the price of Indiana coal outside the state is about 75 per cent more than that inside the state limits.

Production continues to be fair and the car service shows every indication of improving.

### CHICAGO

*Both Steam and Retail Supplies Are Improved—Government Investigation Continues—Anthracite Receipts Are Larger.*

The fuel supply is in such a shape that the average dealer no longer buys any kind of coal that is offered but now is in position to pick and choose. The manufacturers are also in a very strong position, as practically all of them have substantial supplies on hand.

The Chicago Real Estate Board, however, still claims that there is a very serious shortage and states that a number of the large coal-carrying railroads coming into Chicago are disobeying rulings of the Interstate Commerce Commission, and using coal cars in carrying other materials.

The district attorney in Chicago is still carrying on a very thorough investigation and several more jobbers are in difficulties. It seems that these jobbers wrote circular letters to the trade, offering coal at very high prices. The various district attorneys throughout the Middle-West are now co-operating; for instance, if a Chicago jobber sells a car of coal at an exorbitant price in Iowa, the district attorney there reports the matter to the Chicago district attorney. If the coal was mined and shipped under his jurisdiction he attends to the matter himself.

Anthracite coal is now coming in more liberally than at any time during the past 12 weeks. However, such a very serious shortage exists that it is doubtful if the public will obtain as much of this fuel as is desired. Considerable shipments of Pocahontas have been coming in, but most of this coal has been applied on old contracts that were made early last spring.

### MIDWEST REVIEW

*Prices Recede Further—Car Improvement Is Marked—Labor Situation Much Better.*

The past week showed still further reductions in the prices of the poorer grade coals produced in this territory. On account of the very good car supply, both in the Springfield District and the Standard District, prices moved down toward more normal levels.

There has been, however, no signs of weakness in the better grades like the

Franklin, Saline and Williamson County products. What little coal from these three counties that has been selling on the open market has gone at fairly high figures, although not as high as three or four weeks ago. This, however, is not because the demand has dropped off, but because there is a concentrated effort being made to keep prices at more reasonable levels.

From a great many sources it is noted that the labor situation has vastly improved. Miners who were lured away by higher wages in various manufacturing lines have been forced to return to the mines on account of the noticeable let-down in practically all manufacturing industries in the Middle-West. Labor is showing a very decided inclination to do more work than heretofore and is now doing a normal amount of work in the course of an eight-hour day. In addition, the railroads are having no difficulty in hiring just about as much help as they want and there has been a gradual but noticeable improvement all through.

The car supply for the mines in Indiana and Illinois is averaging somewhere between 60 and 70 per cent, which is a decided improvement. The fact that the mines are now able to run more has had something to do with the let-up in the demand.

### DETROIT

*Bituminous Receipts Improve—Demand Is Sluggish and Prices Weaken—Retail Trade Unusually Quiet—Little Anthracite Comes In.*

**Bituminous**—While some dealers believe they can see a slight improvement in the movement to the local market the supply is still meager in comparison with normal requirements. With numerous large manufacturing plants and industrial consumers operating on a basis much short of full capacity, the inquiry for steam has been substantially reduced and in consequence the present moderate receipts appear to be providing for the needs of consumers. Some users are evincing a lack of interest in the market either because of their uncertainty concerning the business outlook or because of the expectation that reductions will soon be made in selling prices. The result is a rather sluggish market.

In the hope of buying more cheaply the household consumers show a slackening interest in making provision for future requirements. The very moderate temperature continues to encourage delay in buying domestic, despite the fact that supplies are so limited that any sudden cold spell probably would speedily exhaust available stocks.

Mine run from West Virginia is quoted \$8.50 at the mines, lump is \$8.75@ \$9, with the supply very small. Hocking mine run brings \$8 and lump \$8.50, with little in sight.

**Anthracite**—Retail dealers say they are getting a little anthracite, but the movement is irregular and uncertain. Though the inquiry from household consumers lacks the urgency of cold

weather demand the dealers have been unable to accumulate any stocks in yards and have not yet succeeded in filling the orders of many customers. Retail prices show considerable range. In some parts of the city chestnut brings \$20 and elsewhere \$17.50.

### COLUMBUS

*Weakness in Steam Grades Is More Apparent—Domestic Is Still Fairly Strong—Lake Trade Is Active—Production Shows Increase in Most Districts.*

Domestic trade shows considerable activity but the Cleveland price conference had the effect of curtailing buying. Dealers who were in the market for stocks held off to see what action would be taken and as a result some weakness in domestic prices developed.

Retail stocks are not heavy and some dealers are not in a position to take care of their customers. Retail prices have not declined to any extent as yet. Hocking lump retails \$9.50@ \$11, mine run \$9@ \$9.50. Pomeroy Bend lump is \$9.75@ \$11. West Virginia splints sell \$10.50@ \$11.50 and Pocahontas is \$12.50 @ \$14 for lump and \$11.50 for mine run.

Steam grades are weaker all along the line and reductions have amounted to practically \$2 a ton. This is due to reduced demand from industries. Railroads are not purchasing as heavily as formerly. Public utilities are well supplied and some cheaper prices for that kind of business are heard.

Lake trade was still active and a larger tonnage was being moved.

Vessel movement is generally good and no congestion is reported at any point.

Production is fairly good in all Ohio fields as a slight improvement in the car supply is reported. The Southern Ohio Coal Exchange reports that for the week ending Oct. 16 the southern Ohio field produced 304,800 tons as compared with a capacity of 617,800 tons. Of the shortage 171,000 tons was due to no cars. In the Hocking Valley field the output is between 50 and 60 per cent. Pomeroy Bend reports the same percentage while eastern Ohio is credited with 65 per cent production.

Prices at the mines of the principal coals used in central Ohio are:

Hocking lump.....	\$5.00@ \$7.25
Hocking mine run.....	4.50@ 6.50
Hocking screenings.....	4.25@ 6.25
Pomeroy lump.....	5.25@ 7.25
Pomeroy mine run.....	5.00@ 7.00
Pomeroy screenings.....	4.75@ 6.50
West Virginia splints, lump.....	6.00@ 7.75
West Virginia splints, mine run.....	5.50@ 7.00
West Virginia splints, screenings.....	5.25@ 7.00
Pocahontas lump.....	6.75@ 8.00
Pocahontas mine run.....	6.25@ 7.75
Kentucky lump.....	6.50@ 7.75

### ST. LOUIS

*Quiet Market Prevails—Steam Sizes Are Heavy—Colder Weather Indicates Better Market Conditions—Car Supply Is Short, with Many Minor Labor Troubles.*

The St. Louis market continues heavy with steam sizes from the Standard field. Screenings are down to \$3 and are hard to move, with the result that many operators are selling mine-run to

railroads at \$4@\$.450. Domestic ranges \$4@\$.550 per ton at the mine.

Car supply throughout the Standard field is about three days per week, with many labor troubles of a minor nature. Most of these are taken in the form of Saturday holidays, the miners refusing to work the sixth day.

In Chicago the market has eased up, throwing an unusually heavy tonnage here, although the movement Northwest to Kansas City, St. Joseph and Omaha is good, everything considered.

The Missouri district west of the river is getting far more coal. This is largely a result of the activity of the local coal bureau, working under the supervision of representatives of the Illinois operators and the railroads, who were appointed by the Public Service Commission of Missouri.

Conditions in Mt. Olive continue to be about normal, with the usual heavy railroad tonnage. Some labor trouble has been observed the past week or two. Prices are \$4@\$.5 for domestic sizes, with most of the steam going on contract.

In the Carterville field fairly good working time is secured, excepting on the Missouri Pacific, which has, however, shown up better the past week than for sometime past. In a general way the field gets from three to four days a week, with a heavy railroad tonnage at mines making better working time. Prices range \$4@\$.550, the circular price with big operators. Independents are playing the market as high as \$8 on all sizes.

In the past week something like 10 or 15 cars of anthracite have moved in to St. Louis and it is understood that there will be no additional shipments until after the first of the year. Perhaps almost as many cars of smokeless have been received and a good tonnage of by-product coke is moving from Alabama through the St. Louis gateway, with nothing in the way of Arkansas coal listed.

The domestic demand has been quiet for the last week or two, but colder weather indicates more activity. There is no change in retail prices.

## South

### LOUISVILLE

*Car Supply Is Still Short—Demand Good, but Prospects Are for Lower Prices as Result of Slackening Demand from Lakes and Northern Industrials.*

The coal trade has received with interest developments of the association meeting in Cleveland. It is believed that much good will be accomplished as a result of the meeting, and that this will have a general bearing on future production and distribution.

Announcement of the withdrawal of allotments for Lakes movement is taken to mean that car supply will be better. It is held that with shorter hauls closer to home, cars will make more trips and work to better advantage with quicker turn-around.

Action of the Indiana Food & Fuel Commission last week, ordering operators to first supply 1,600,000 tons of coal for state use monthly, before accepting additional outside business, and apportioning the amount that each operator shall supply, is considered rather highhanded, and probably unconstitutional. Such an order would prevent operators from receiving better prices than set by the commission from outside sources.

Eastern Kentucky production is improving slightly as a result of a small improvement in car supply. Good weather is resulting in steady operations at the mines, and better production for the fields as a whole.

A fair amount of both eastern and western Kentucky and West Virginia coal is coming to Louisville by rail, with some West Virginia river coal arriving. However, domestic sizes are in good demand, and retailers report that they are still far behind on orders. Retail prices are steady.

Prices quoted local dealers and industrial consumers on eastern Kentucky coal run \$6@\$.850 a ton on mine-run and screenings, with practically no lump offered.

Retailers are asking \$10.40 for west Kentucky lump, \$11.50 for east Kentucky, \$10 for west Kentucky mine-run, \$11 for east Kentucky, \$9.50 for east Kentucky screenings, and \$8.50 for western.

### BIRMINGHAM

*Decreased Steam Demand Lowers Prices—Domestic Market Is Strong—Car Supply Adequate—Production Increases Steadily—Labor Situation Improves.*

Inquiry for steam coal in the local market is not as strong as a week ago and spot prices have receded somewhat, coal now bringing \$5@\$.750. While there is more coal available than for quite a while, the trade requirements are sufficient to absorb all offered.

Cahaba, Black Creek, Pratt and other grades of like quality are still not available in quantity. Probably 90 per cent of the output is being applied against contracts, and few of the larger companies have any coal to offer the spot trade.

All domestic grades are still in strong demand, though the tenseness of inquiry has been relieved somewhat by the order of the State Fuel Administrator prohibiting the shipment of any domestic out of the state during the period from Sept. 20 to Nov. 8. This will provide for current needs of the various distributing centers and probably enable retailers to stock ahead a little.

A gross margin of profit of \$3.60 per net ton has been fixed for dealers in Montgomery, Mobile and Birmingham, out of which must come all expenses except freights. This, in connection with the lower prices at the mines, provided for in the contract between the state and operators, will result in a saving to the consumer of \$1.50@\$.2 per ton.

Operating conditions are rapidly approaching normal. Working forces are much larger than a week ago and there is a strong inclination among the strikers to seek employment. In the Walker County fields reports indicate that men are returning to work as rapidly as they can be placed. During the week the mines at Brookwood and Searles, in Tuscaloosa County, which operations were working under the Blue Book contract, not made direct with the union but approved by local union officials, went out on strike, but these mines are now running again and will not suffer much loss in output.

Cars are being supplied in sufficient numbers to enable steady operation and production is steadily gaining. This is reflected in the easier market conditions and lower prices.

## Western

### DENVER

*Heavy Interstate Movement Causes Car Shortage and Inadequate Local Stocks—Prices Are Firm—Miners' Demands To Be Decided Nov. 4.*

Loss of production in the southern Colorado bituminous fields due to lack of cars is traceable in part to the tremendous shipments, continued during a period of favorable weather, to Missouri river points that ordinarily are not supplied with Colorado coal.

This is the indirect answer given to complaints from four mines in the Walsenburg district that were forced to close down for several days within the week on account of no cars for loading.

Cars for interstate shipments are slow in returning and as a result many dealers will not be able to get the kind of coal they are in the habit of purchasing. This indicates a distribution of various grades of bituminous in Colorado before the end of the winter.

Prices are to remain at present levels during November, according to general expressions among dealers. This will depend somewhat on the outcome of the hearing of operators and union officials before the state industrial commission concerning demands of miners for a 20 per cent increase in pay in the lignite fields. The higher wage applies to "dead" work, lost at present, miners claim. The hearing is set for Nov. 4.

There are more cars, proportionately, in the lignite fields, but railroads explain that the shipments are mostly intrastate, thus enabling equipment to remain within the district.

The demand in big cities is spotted, with little activity shown here. Dealers have only small reserve stocks, due to inability to get bituminous in quantities and because lignite does not store well. Consumers seem to be buying as they go along, despite the earnings of regulatory methods for distribution that may have to be invoked unless present production is uninterrupted by labor troubles.



## News From the Coal Fields

### Northern Appalachian

#### NORTHERN PAN HANDLE

*Increased Car Supply Enables Better Production — Prices Tumble — Lakes Market Weakens.*

While car supply varied in the week ended Oct. 23, yet upon the whole, a substantial gain in production was made possible by an increased supply of empties. The Pennsylvania R.R. was able to furnish the mines on its line a full run of cars during the greater part of the week. The Baltimore & Ohio supply was less satisfactory, as mines on that road were forced to be content with 60 per cent of mine rating.

There was a most decided downward trend to prices. That was particularly true as to the Lakes market, where it was apparent that there had been a decided slackening in the demand, due partly to lack of bottoms and also to the belief that lower prices would prevail.

While the shortage of cars on the Baltimore & Ohio was attributed in part to slow dumping at the Lakes and to failure of Western connections to return cars promptly, nevertheless, the rail movement was good and there was little or no delay either on the Pennsylvania or the Baltimore & Ohio.

#### CONNELLSVILLE

*Spectacular Slump in Coke Prices—Furnace Market Leads Decline—Future Price Level Is Uncertain.*

The expected slump in spot coke prices has begun, and prices have declined from day to day, exceeding the extreme predictions that were made.

Inasmuch as Connellsville furnace coke sold at an average price of under \$1 in 1894, for spot shipment at \$1.50 in May, 1915, at as high as \$15 in August, 1917, at \$6 during the period of war control, at \$3.60 in April, 1919, and at \$19 last August, any price that may now be made can be called relatively high or low, according to the viewpoint. Declines may continue from the \$10 level seen at this writing. Nor can any influence in the direction of a stable market be expected to be exerted by the position of consumers, as to what they can afford or are willing to pay, because the blast furnaces have no idea as to the future of pig iron prices, that market declining on the appearance of almost every inquiry.

The decline in spot furnace coke was caused by several furnaces deciding to bank or blow out, accordingly instructing operators to discontinue shipments on their requirement contracts, this

throwing extra coke on the spot market at the same time that the buying pressure diminished. Production has continued at approximately the same rate as formerly.

Spot foundry coke has yielded much less, but simply because it naturally presents a more sluggish market. As coke producers who have not lately been offering foundry find a restricted outlet they will doubtless offer this in such manner as to cause it to decline to a normal relation with furnace coke. At the moment spot furnace coke is quotable at \$10 and foundry at \$15.

#### PITTSBURGH

*No Complaint of Car Supply—Spot Demand Is Extremely Light—Fear Is Expressed That Some Operators Will Reverse Their Position and Sell at a Loss.*

Car supplies have averaged a trifle heavier. There is practically no complaint now on this score, but the change is due less to the increase in supplies than to the decided falling off in market demand, which is more or less spectacular in character.

The change seems to be due more to the different attitude of buyers than to a change in the rate of consumption, though there is no doubt that on the whole there is a material decrease in consumption by the majority of industries. The decrease is rather marked in the case of the steel industry, but

this does not apply to the Steel Corporation, whose operations are undiminished.

The market has become so dull, and values have yielded to such an extent that at the moment it is hardly quotable, but may be named about \$6 for steam and \$7@8 for gas and by-product.

Conservative operators, who confined their operations to shipments against contracts, fear that some of the producers, who secured the highest prices on the spot market, will now spend a fraction of their accumulated profits in an effort to buy their way back into regular trade, selling coal temporarily at a loss for this purpose.

#### CENTRAL PENNSYLVANIA

*Car Supply Is Improved—Good Demand for Export—Labor Situation Is Fair—Prices Are Weaker.*

Car supply during the past week has been reported much better, with an average of 60 per cent over both the Pennsylvania and the Baltimore & Ohio. The demand for Baltimore & Ohio shipments is much stronger than for P. R.R. fuel, due to embargoes on export coal over the Pennsylvania.

Operators in central Pennsylvania report the labor situation fair at the present time. Almost every mining concern in the district could use more men, but the situation seems quiet and there are comparatively few labor disputes.

Prevailing prices offered for coal are: Pool 10, \$9.75 per ton; Pool 11, \$9, and Pool 18, \$6.50. During the past week there has been a decided drop in the demand for Pool 18 coal, which is of an inferior grade. Buyers seem to be looking for a better grade of fuel at the present time.

### Estimates of Production

FROM THE WEEKLY REPORT OF THE GEOLOGICAL SURVEY

#### BITUMINOUS COAL

	1920	1919 a
	Calendar Year to Date	Calendar Year to Date
Oct. 9b.....	12,103,000	11,888,000
Daily average.....	2,017,000	1,981,000
Oct. 16b.....	12,101,000	11,829,000
Daily average.....	2,017,000	1,972,000
Oct. 23c.....	12,146,000	13,140,000
Daily average.....	2,024,000	2,190,000

#### ANTHRACITE

(In Net Tons)

Week Ended	1920	1919
October 9.....	1,847,000	1,955,000
October 16.....	1,855,000	1,916,000
October 23.....	1,915,000	1,992,000

#### BEEHIVE COKE

United States Total

Oct. 23c	Week Ended	Oct. 25	1920	1919a
1920	1920	1919	to Date	to Date
389,000	404,000	366,000	17,264,000	15,852,000

(a) Less one day's production during New Year's week to equalize number of days covered for the two years. (b) Revised from last report. (c) Subject to revision. All figures in net tons.

### EASTERN OHIO

*Suspension of Lake Priority Releases Coal for Local Trade—Labor Situation Shows Little Improvement—Cars Adequate—Prices Are Still Falling.*

Interest during the past week was centered in the meeting called by the officers of the National Coal Association in Cleveland in response to the suggestion of Attorney General Palmer to consider methods for reduction of prices and the elimination of undesirable practices in connection with the marketing of coal.

The temporary suspension of the Lakes priority order was caused by heavy loadings, accumulation at lower ports, and the fact that the Northwest would not absorb a continued heavy tonnage at current prices. The result will probably be that there will be some reduction in the quantity sent to Lakes from eastern Ohio, thus providing an increased tonnage for local trade.

Labor situation shows little improvement and there seems to be a feeling of unrest and general dissatisfaction with conditions among the men.

The car supply during the past week has been about 75 per cent of mine ratings, but this was sufficient to meet the requirements of most mines, on account of the labor situation.

Prices still show a tendency to fall—lump being quoted \$5.50@\$.6. Production during the week was probably in the neighborhood of 400,000 tons, of which about 35 per cent was railroad fuel.

### UNIONTOWN

*Price Slump Continues—Car Supply Meets All Needs—Labor Situation Greatly Improved—Coke Market Is Very Weak.*

If a sudden check is not placed on the present slump in prices, November will bring the local market level to half its early fall average.

Spot furnace coke is selling at \$11.50. This is just \$3 less than last Friday's figure and a full \$6 under the price one week ago. Foundry grades command an additional dollar per ton, though one sale of fair size was reported yesterday at \$10.

Coal is also quoted generally lower, though the loss is not so drastic. By-product coal is now \$8; Pool 44 is \$7.25; steam coal on all roads is \$6.75@\$.7.25; P. R.R. Pool 34 is \$7.50. B. & O. \$10. B. & O. shipments have suffered least.

Few permit shipments are going to the piers, their number and size being quite insufficient to act as a drag on the downward price trend. Nation-wide efforts to continue the movement of lower prices are also becoming effective.

Producers find the worst feature of the present market is the fact that it is merely nominal. Price adjustments are being made from day to day merely to place production, and even this is becoming a matter of difficulty. The coke market is particularly narrow, most of the quantity buyers remaining out of the market and evincing no dis-

position to resume their purchases.

Production is very good. Labor is daily becoming easier, the influx of Ohio workmen continuing in all parts of the region. Car supply is so good as to be almost embarrassing. The recent 100 per cent coal and coke car placement records of the Monongahela Ry. are being maintained and with them correspondingly better placements on the Pennsylvania and B. & O. branches.

### FAIRMONT

*Production Declines With Smaller Car Supply—Export Market Is Attractive—Prices Weaken Slightly.*

Production was on a smaller scale during the week ended Oct. 23 than during the preceding week, cars not being so plentiful. The supply was adequate on Monday in the Fairmont and other regions but slumped badly after that, especially on the Baltimore & Ohio. Other roads in northern West Virginia and especially the Western Maryland supplied a larger percentage, though there was a rather heavy assignment of cars on the Monongahela Ry. Indications seemed to point to Western connection as being responsible for the shortage of cars in the northern part of the state.

There appeared to be a gain in the volume of coal shipped to Western markets, though of course export business was the most attractive. A heavy tonnage was still being poured in upon the Lakes.

The demand for line shipments could not be considered especially strong and prices for such were not averaging more than \$6@\$.6.50 a ton. There was a stable market for export and as much coal as possible was being sent to Curtis Bay and other Eastern piers although from some points in the field Tidewater shipments were embargoed.

## Middle Appalachian

### NORTHEAST KENTUCKY

*Slight Increase in Car Supply—Lake Business Takes Large Part of Output—State Domestic Demand Given Preference.*

Conditions in the week ended Oct. 23 were more conducive to larger production than had been the case during the previous week, although the gain was not particularly marked and failed to bring the output much over half of potential capacity.

Only 112,000 tons or 53 per cent of capacity were produced, leaving a loss from all sources of 110,000 tons or 47 per cent. The greater part of the loss was due, as usual, to a car shortage of 41 per cent. The Millers Creek field had no cars at all on Thursday, Oct. 21.

Lake business required a fairly large part of the output though shipments in that respect were not so heavy during the latter part of the week as earlier in the period.

In common with other Kentucky mines those in northeast Kentucky were

endeavoring to take care of state requirements, especially among domestic consumers. It is believed that there will be a quicker return of cars than there has been, because of comparatively short hauls. In many instances a price of \$6@\$.6.50 a ton was prevailing for run of mine coal.

### KANAWHA

*Production Improves with Better Run of Cars—Lake Shipments Are Heavy—Prices Weaken—Restrictions Cut Export Movement.*

Served with about a 60 per cent car supply during the week ended Oct. 23 mines were able to make some progress in speeding up production. For the latter part of the week, however, the supply was averaging about 58 per cent on the Chesapeake & Ohio, but on the Kanawha & Michigan there was less than a 50 per cent run during the greater part of the period.

Heavy shipment Lakeward on Service Order 10 had a tendency to depress prices. Quotations were \$5.50 for Lake as against about \$6 for line shipments. The Tidewater embargo in force throughout the greater part of the week, applying to all shipments except in 70-ton cars, restricted the market and forced prices down to some extent.

### NEW RIVER AND THE GULF

*New River Output Increases—Gulf Car Supply Is Unchanged—Domestic Demand Grows—Prices Are Firm—Some Labor Indolence in Gulf.*

Gains were scored in the production in the New River field during the week ended Oct. 23. With cars coming into the region in larger numbers, the first day's supply, combined with what was furnished on Tuesday and Wednesday, enabled mines to produce to capacity. During the latter part of the week, however, production underwent a decrease.

There may have been a slight weakening of the demand for New River fuel but it was not particularly marked. While the export business done was on a large scale, it was stated that inquiries for Inland, both East and West, were fairly strong. In fact, a larger tonnage is going to Western markets than for some time, owing to an increase in the domestic demand.

While the gap between the car supply furnished Winding Gulf mines by the Chesapeake & Ohio R.R. and that supplied by the Virginian Ry. was closed to some extent, the latter still had more empties for its mines, the supply still averaging about 70 per cent. On the Chesapeake & Ohio it was not more than 60 per cent.

There continued to be a strong call for Winding Gulf fuel in all markets and especially at Tidewater, where prices showed little signs of any recession and bottoms were plentiful enough to take care of the heavy volume of dumpings. Indolence on the part of the miners was still retarding production to some extent.



**LOGAN AND THACKER**

*Logan Car Placement Is Better—Lake Market Slumps — Heavy Western Movement—Prices Are a Trifle Lower—Thacker Production Gains in Face of Strike Tactics.*

Shipments were rather heavy to Lake during the early part of the week, but there was a falling demand in that quarter which lowered prices. While the demand at Tidewater showed little change, yet it was not until Thursday that mines were permitted to ship either Eastward or to Tidewater unless in 70-ton cars. There was a good call in the Huntington market, but high volatile was not in such good demand as to line shipments. There appeared to be little change in the market for by-product. As nearly as it was possible to tell the general price, spot mine-run for Inland delivery was in the neighborhood of \$6@6.50.

A 25 per cent shortage on the Norfolk & Western was not felt to a great extent in the Williamson field, owing to the strike. Still, 37 of the 44 mines which had been closed down when the strike began early in July were again in operation. Production for the first half of the month in the area directly affected indicates an output of 100,000 tons for October.

After a period of quietness, covering the first half of the month, strikers are renewing their attacks on men and plants, being prompted to do so by the realization that the strike is going against them.

Such coal as was being produced was moving for the most part to Western markets.

**POCAHONTAS AND TUG RIVER**

*Heavy Lakes Movement—Good Domestic and Export Calls—Prices Are Fairly Firm—Cars Are Scarcer and Production Suffers.*

Such a shortage was responsible in cutting down the production in the Tug River field from 87,000 to about 70,000 tons. Shipments to the Lakes were heavier than usual, due to insistence of the Norfolk & Western Ry. that operators make up their proportion before the close of the season.

A part of the tonnage shipped to the Lakes would otherwise have gone to Tidewater, as demand at that point continued to be heavy. There was a growth in the Western demand, because of increasing domestic needs. Prices appeared to be pretty well stabilized. While a labor shortage was still affecting the output, it was not doing so to the extent that the car shortage was.

More than 100,000 tons production was lost in the Pocahontas field because of an insufficient car supply, the shortage being even somewhat more pronounced than during the preceding week. During the greater part of the week supply amounted to less than 75 per cent of requirements. The output was limited to 300,000 tons or less.

During the greater part of October the car supply on the N. & W. was

considerably under par. That condition is laid at the door of Western railroads and also to the fact that cars are not coming back from the Lakes.

Conditions were such as to make it possible to easily market all the coal produced, especially in view of an excellent Tidewater demand and a growing Western domestic business. While it was not believed that so much coal was needed at the Lakes, yet Pocahontas mines were required to keep a large volume flowing to Lower Lake points.

**VIRGINIA**

*Production Increases Slightly—State Institutions and Domestic Needs Get First Call on Output—Inland Market Is Weaker.*

A labor shortage was proving the greatest hindrance to production in southwest Virginia in the period ended Oct. 23, the loss amounting to 8.9 per cent of potential capacity.

While there was a reduction of about 5 per cent in the labor loss there was an increase in the loss from a car shortage of 4 per cent. The shortage of empties was making it necessary to use about 41,000 tons of coal in making coke. Shortage was greatest on the N. & N., though the Norfolk & Western had only an 84 per cent supply for its Virginia mines.

Operators were using every effort to take care of domestic consumers, state institutions and public buildings even at a sacrifice. While export prices were much lower than had prevailed, nevertheless producers had all they could handle. The demand for Inland was somewhat off color.

**Middle Western****WESTERN KENTUCKY**

*Demand Is Good—Field Operating to Capacity of Car Supply—Steady Increase in Demand from New Markets.*

While some fields of the country are beginning to report weakness as the big demand is filled, the western Kentucky operators are finding demand greater than production ability. The call for western Kentucky steam is growing so rapidly that the field today is paying more attention to mine run than to lump, which was formerly the principal item in demand.

Some coal is now selling as far north as the Dakotas. There is also an increasing movement into the Cincinnati market. A good Southern market obtains on prepared sizes, while points close to the field are taking good supplies of both grades.

Western Kentucky operators are feeling more cheerful than for many years, as they have finally secured equitable rates to markets for steam as well as other sizes, and it is believed these markets will be retained even after conditions return to normal.

Production is merely a question of car supply, which for October averaged

about 34 per cent on the L. & N. and 57 on the I. C. Supply on the L. & N. has been poor for the past 10 days, being under 30 per cent, and dropping as low as 27 per cent on several occasions.

Quotations show lump \$6.50@8; mine run \$5@6.50; screenings \$4.50@5.50.

**DUQUOIN**

*Slight Decrease in Placements—Steam Prices Decline—Bulk of Tonnage Is Moving North.*

Conditions are about the same as the week before last, with possibly a slight falling off in car supply. The greater part of the shipments are going North and Northwest, with a small portion moving South and into St. Louis.

Continued summer weather caused a slump in the market. However, it is sure that the first cold spell, which cannot be far off, will make inevitable the usual scramble for coal.

Mines along the Illinois Central R.R. are working about 65@70 per cent of normal. Operations to the north of here, on the Wabash, Chester & Western, are working a little better than their average, the road having shown better service during the last two months.

During the week prices on mine run and screenings seemed to slack off somewhat, while lump held its own. Mine run varied \$4.70@5; screenings \$4@5.25; lump \$6@6.50.

**Southern Appalachian****SOUTHEASTERN KENTUCKY**

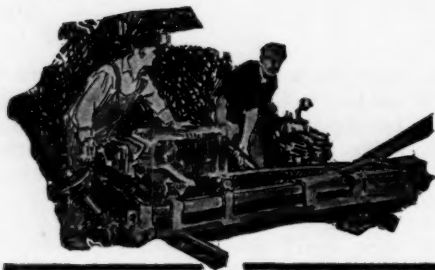
*Strong Demand for Domestic—Price Ruling Is Generally Observed—No Orders Being Placed Under Service Order 21—Car Supply Shows No Improvement—Labor Conditions Good.*

The first cold snap has greatly increased the demand for domestic. The market for steam coal is sufficient to take all the nut and slack offered at the Slattery price of \$6 per ton.

Car supply is about the normal two days per week, with an occasional three days' run for some of the mines. Public utilities are receiving but scant consideration under Service Order 21, as not a single order has been placed for assigned cars in this field.

The recent increase of \$1.50 to day workers seems to have greatly improved the labor situation, as no friction has been reported for several weeks. The decline in prices has also put a stop to the practice among the small operators of bidding up the scale in their attempts to increase their production.

Operators are still up in the air as to what action they shall take on the District Attorney's attempt to dictate prices. While practically no one is willing to predict the outcome, yet it is certain that Mr. Slattery cannot control prices very long via the "bluff" route.



# Mine and Company News



## ALABAMA

The Weller Coal Co. has been incorporated at Birmingham with a capital stock of \$10,000. J. M. Donaldson, president; Mattie Stobert, vice-president, and Thomas Stobert, secretary-treasurer, all of Birmingham.

The Big Warrior Coal Co., of Birmingham, has filed notice of a change in name to the Mount Carmel Coal Co.

Plans are being arranged by the Big Four Coal Co., of North Birmingham, for the rebuilding of its coal tippie recently destroyed by fire.

## COLORADO

Colorado Mines produced 1,027,884 tons of coal during September, compared with 1,043,593 in August, according to the monthly coal production report issued by James Dalrymple, state coal mine inspector.

To Sept. 30, this year, 9,033,050 tons of coal had been mined in Colorado an increase of 1,448,976 tons over the same period in 1919. An average of 13,063 men were employed in the mines during September.

The slight decrease in tonnage during September, compared with August is due to shortage of cars.

## INDIANA

The Simplex Coal and Mining Co., an organization formed at Petersburg, has been incorporated for the purpose of operating coal mines. The directors are Earl Field, Harry Weeks and Harry Patrick. Articles were filed the same day by the H. Hoch Coal Co., with home offices in Evansville. The directors of this company are Margaret Hoch, David Ellison and Martin Bettag.

The Northwestern Indiana Coal Co., an Illinois corporation, has applied for admission to Indiana. The company is capitalized at \$307,000.

## ILLINOIS

Coal leases seven miles northeast of Murphysboro in Somerset and DeSoto townships are being taken by George Dowell of Duquoin.

The Midland Coal Co. is also said to be leasing coal tracts in that territory within striking distance from the mine operations at DeSoto, and it is understood that one or two new prospects are in line for new mines to go down in this section.

The Southern Gem Coal Co. has made arrangements for the sinking of a large mine south of Herrin. The company has in operation a number of mines in southern Illinois and is considered to be among the leaders of the state. The output of the mine has been announced as 5,000 tons daily.

The Jewel Coal & Mining Co., of St. Louis, is progressing nicely with its new shaft west of Duquoin. The plant will be one of the most modern in the vicinity and is one of the main industrial projects which at the present seem to be giving Du Quoin a financial and industrial boom. The mine will be equipped with a steel tippie with shaker screens and booms complete and the coal will be hoisted with steam. Electric mining machines will be installed and electric haulage used to transport the coal to the shaft bottom. The company has secured ample acreage, having under lease or option some 1,500 to 2,000 acres. Coal will be hoisted from the air shaft within 2 or 3 months; however, the main shaft will not be ready for operations before the first of the year, plans now being made for the mine to be running full blast by that time. Supt. W. S. Burris, now of the Jewel mine, will be general superintendent of the two mines.

Mine No. 18 of the Peabody Coal Co., near West Frankfort, recently was the scene of another serious explosion. The explosion killed one man and injured several others. It will be remembered that this was the mine in which Philip H. White, general superintendent of the Peabody interests lost his life two months ago while attempting to put out a mine fire. Rescue teams from various towns were rushed to the scene.

The Madison Coal Corporation which is erecting a mine tippie and buildings at its new shaft near Cambria is rapidly nearing the finish of the job and will soon be hoisting coal. The investment in the sinking and erection of the mine will be \$3,000,000. One of the features is the fact that the company is doing its own work of erecting the building and top works instead of letting the work out on contract.

Work has been started on the Felton mine north of Auburn, by the Illinois Coal & Coke Co., who are the new owners of the plant. The mine was formerly owned and operated by the Pittsburg Coal Co. before the tippie was destroyed.

## KENTUCKY

The Logan Elkhorn Coal Co., of Whitaker, has perfected plans for the erection of an additional coal tippie on a local site.

The R. H. Elkhorn Coal Co., up Shelby creek, is launching an important new development on the Baltimore & Ohio R.R. entering Jenkins. They will soon be in readiness to begin shipping coal. Another new concern just above is the Buckfield Coal Co., who are constructing an incline and bucket conveyors, which will be nearly 100 feet high. It is planned to load about 1,000 tons daily when the mine is operating. The Elkhorn Seams Colliery Co., at Collins, a new town, also further up Beaver Creek, have started coal shipments, but are adding extensions and improvements which will soon enable them to double their present capacity.

Other development in that section of importance is the Ford Elkhorn Coal Co., at the mouth of Robinson, and the Elkhorn-Shelby Creek Coal Co., at Escoc, both making varied increases and extensions. Large power houses are being completed. The Kentucky Block Fuel Co., at Elwood, on the Baltimore & Ohio at Shelby Creek, is making extensions in its plant.

The Prestonburg Coal Co., which recently increased its capital, is adding a new development in the Bull Creek section. A spur line of railroad is also being extended. They have another modern mining plant nearer Prestonburg.

At the mouth of Beaver Creek the Malone-Elkhorn Coal Co. is opening several hundred acres and developing a first-class plant. They will begin shipping coal at once.

In the Harlan County field there is the Black Mountain Coal Co., a \$50,000 corporation, just organized for a development project. Senator H. M. Brock is the leading incorporator. Leases have been made and every arrangement perfected for the new work.

In Dizney, upper Harlan county, the Kenvir Railroad Co. has been organized by F. A. Kruse, N. D. Bachman, and others. They will construct several miles of railroad into a new territory and open extensive coal lands for early development. The Harlan field is also active. At Allcock, in the Carr's Fork field.

The Carrs Fork Coal Co., of Allcock, is having plans perfected for the development of about 2,400 acres of coal property, recently acquired and it is expected to increase the daily output from 200 to 2,500 tons. Electrical equipment for all features of operation estimated to cost about \$50,000 will be installed. The company recently filed notice of an increase in capital from \$300,000 to \$400,000.

## OHIO

The New York Coal Co. has a large force of workmen engaged in making a new mine opening and constructing a new tippie and buildings on the Gossman farm just east of Crooksville. The Showers constructing company is in charge of the outside work, which with favorable weather will be rushed to completion within the next 60 days. The mine will tap an immense block of coal owned by the company and when completed will be one of the best equipped mines in the Crooksville field.

One of the most modern mines in the country will be opened between Lowell and Coal Run, by the Muskingum River Coal Co., incorporated for \$50,000. The incorporators are Loring Staggs and N. E. Kidd, of Marietta; R. C. Whitehill, A. L. McDonald and J. J. Powell, Jr., of Woodlawn, Pa. Property of the new company is located near Coal Run. Equipment for a modern electrical mine has been ordered and coal will be mined on an extensive scale. A. L. McDonald is President.

The Morgan Coal Co., of Bannock, has acquired 500 acres of coal property and extensive plans are being prepared for its development with daily output of about 400 tons. Electrical and mechanical equipment will be installed at an early date.

## PENNSYLVANIA

In an explosion in the Baltimore No. 5 mine of the Hudson Coal Co., six men were burned and two were injured by flying rock. The explosion occurred about half a mile from the foot of the shaft.

The Shamokin Red Ash Coal Co., through D. H. McGhee, president, has notified the State authorities in Harrisburg, that it has increased its capital stock from \$10,000 to \$60,000.

Joseph P. Morrison and Samuel Spector, both of Mount Carmel, and Patrick J. Dempsey, of Girardville, have taken out a charter for the Girardville Coal Co., of Girardville. The new concern, capitalized at \$6,000, will "dig, dredge, wash and prepare" coal for market.

Construction work is under way on the new buildings for the Pine Run Coal Co., of New Bethlehem, and operations will be commenced at an early date. The structures are one-story and estimated to cost about \$200,000.

The Roberta Coal Co., of Johnstown, recently closed a deal of \$300,000 for the coal holdings of the Jacob Tome Institute, of Baltimore, Md., and located generally in Chest and Burnside townships, Clearfield County.

The Union Coal & Coke Co., a subsidiary of the Midvale Steel & Ordnance Co., expect to construct soon 200 dwellings at their new mine, the opening of which was started about a year ago, in Washington county, Pa., a couple of miles from their Mananna mine, formerly owned by Rochester & Pittsburg Coal Co.

## UTAH

Frank Ramsey and Sheriff Williams of Provo who have just returned from an inspection trip to the Sheriff's coal property at Red Narrows in Spanish Fork canyon report the coal vein is seven feet wide and that some portions of it are already showing a good grade of fuel. They brought back with them samples of coal taken from a tunnel which has been driven 200 feet into the mountain. One of these samples has the appearance of charcoal and looks something like a pressed tree. Work is being continued on the property.

The Sunnyside mine of the Utah Fuel Co. of Salt Lake City, which has been on fire for some time, has been opened. Appearances indicate that the blaze has been smothered by its own gases, it is stated. A number of men protected by helmets are in the mine trying to locate the trouble and as soon as the mine has been cleared of the foul air operations will be resumed.



## WEST VIRGINIA

With the purchase by the **United States Coal Co.** of the holdings of the **Midland Coal Co.** in Phillips County, development of the new acquired holdings will be started on a large scale in the near future. It is stated in fact that the United States Co. will have the largest operation in that county. It is proposed to develop the holdings which are about three miles from this city.

Following a reorganization of the **Birch Fork Coal Co.**, of Charleston, which operates near Jarrol's Valley on March Fork of Coal River, under which a controlling interest is held by T. E. B. Siler and associates, it is announced that many improvements will be made with a view to increasing production. Something like \$500,000 was involved in the reorganization of the company, reorganization plans having been completed with the election of the following officers: T. E. B. Siler, president; R. G. Hubbard, vice president; T. D. Siler, secretary; Floyd Heatt, general manager; J. F. Johnson, superintendent.

The company is now producing about 500 tons a day, principally from the Coalburg seam, but plans are being evolved for the development of coal in the gas seam. A large number of new miners' dwellings are being built for the accommodation of about 100 more miners.

Progress has been made by the **Richland-Marshall Coal Co.**, of Moundsville, in driving a slope to the coal in the new mine which it is preparing to operate on Little Grave Creek in Marshall County. While the slope has been driven more than 100 ft. the company is now engaged in concreting that part of the slope already driven. The mouth of the mine will be protected from floods by a concrete wall. The new mine will be equipped throughout with electrical machinery.

The **Peerless Smokeless Smithing Coal Co.** of Morgantown, with headquarters in Charleston, will undertake, it is indicated, the development of coal tracts in Glade and Fork Lick districts of **Webster Co.**, this company having been organized by Morgantown people in large part, with a capitalization of \$100,000, those most closely connected with the new corporation being A. D. Williams, Albert Layton, W. J. Campbell and Joseph W. Johnson, of Morgantown; E. W. Swan, of Parkersburg.

Organization of the **Fairmont-Reynoldsville Collieries Co.** of Clarksburg, with a capitalization of \$75,000 presages the development of Harrison County coal territory in the near future on a fairly large scale. Active in organizing the new company were: Virgil S. Swearingen, Harry C. Morrison, Flora R. Morrison, N. Fred Rader and Nina O. Rader, all of Clarksburg.

The **Ferndell Coal Co.**, of Phillips, will engage in the production of coal in Phillips District of Barbour County, this company having just been formed with Fairmont people largely interested. The new corporation has a capital stock of \$25,000. Back of the new company are: U. A. Knapp, Samuel B. Brooke, Henry O. Ross, Ray Pepper, Madge Barnes, all of Fairmont.

Harrison County coal lands will be developed by the **H. N. Hough Coal Company** which will operate near Lumberport, W. Va. This company is capitalized at \$50,000. Having an active part in launching the new company were: L. A. Johnson, Clarksburg; H. N. Hough, V. L. Hornor, J. H. Hornor, all of Lumberport; E. M. Robinson, of Shinnston.

A new Huntington corporation is the **Daleport Coal Corporation** of Huntington, capitalized at \$100,000. Plans as to where the company will operate have not so far been disclosed. Behind the new concern are: Harry Leaberry, Henry L. Porter, R. M. Davis, H. D. Davis and F. Leaberry, all of Huntington.

Coal territory in Grant District of Monongalia County will be developed within a short time by the **Dents Run Coal Co.**, of Morgantown, W. Va., just ushered into existence with a capital stock of \$50,000. This company was organized by Joseph Bierer, Paul H. Keener, Everhart Bierer, John F. Keener and William E. Glasscock, Jr., all of Morgantown.

One of the Northern West Virginia coal companies—the **Thermal Coal Co.**, Fairmont, has been consolidated with an Ohio mining company—the **Coal Ridge Mining Co.** of Cleveland—in a new million dollar corporation to be known as the **Champion Collieries Co.**, with general offices at Cleveland, O. This company will be headed by George D. Rowland of Cincinnati.

The largest charter in point of capitalization issued to any coal company in recent weeks has been that secured by the **Connellsville By-Products Coal Co.**, which is

regarded generally as being a subsidiary of the Valley Camp Coal Co., as James A. Paisley, of the last named company, is one of the incorporators of the new concern which was organized to take over the 14,000 acres in the Cochran tract recently purchased by Mr. Paisley, and to develop that tract on a very extensive scale. It will be necessary to build a railroad to the holdings of the By-Product Company in Clay, Cass and Grant districts, but provision has been made for that in the charter of the new company. It is also understood that the newly organized concern may later embark in the business of manufacturing the byproducts of coal. Principally interested in the new company in addition to Mr. Paisley are: Stephen Arkwright, of Fairmont; Robert Buka, of Cleveland; Ross I. Davis, Pittsburgh; John M. Kennedy, Parnassus, Pa.; P. W. Sherman, Lakewood, Ohio; John J. Snure, of Ward.

A small tract of coal in Lincoln County, near Sand Fork, will be developed by the **Eden Park City Co.**, newly organized, with a capitalization of \$10,000. Back of the new company are: D. P. Crockett, of Big Creek; Shelby Shelton, John W. Shelton, Maggie Shelton and Gracie Shelton, all of Sand Creek.

The **Lancaster Coal & Coke Co.** will operate near Kanes Fork. This company represents an investment of Pennsylvania capital with mine in Preston County. It is capitalized at \$35,000, the following people having been active in effecting the preliminary organization: Edward A. Robson, Houston Run, Washington County, Pa.; Joseph H. Johnson, Samuel Aquilina and Edward B. Lancaster, of Charleroi, Pa.; Frank Bertine, Elizabeth, Pa.

The **Mary Coal Co.** has acquired a tract near Kingwood. One of the leading figures in this concern, which is capitalized at \$100,000, is Howard Cross of Maryland. Others interested in the new company are: J. L. Maust, E. Costelow, H. R. Poland and R. A. Poland, of Kingwood.

The **Sudduth Coal Co.** will operate Upshur County, headquarters of the company for the time being to be established in Grafton. This concern has a capital stock of \$25,000. It was organized by: S. F. Sudduth, of Grafton; J. W. Snider, Grafton; J. Ray Smott, Newberg; J. C. Federer, Morgantown; G. L. Humphreys, of Point Marion, W. Va.

## Traffic News

**Interstate Commerce Commission**—In a complaint to the I. C. C. the Merchants Coal & Coke Co. of Chicago attacks as unreasonable the rates on coal from Belleville and Cantine, Ill., to stations in the Chicago district.

The West Kentucky Coal Bureau in a complaint alleges unreasonable rates on coal from mines in western Kentucky on the Illinois Central railroad to destinations in Missouri and Kansas, and request is made for rates not more than 25c per ton higher than from mines in southern Illinois.

The Slogo Coal Co. of Johnson City, Ill., in a complaint alleges that the Missouri Pacific and other roads refuse to establish through routes and joint rates from its mines to destinations on the C. B. and Q. The Commission is asked to establish joint through rates which shall not exceed those in effect July 1, 1917, by more than 15 cents per ton plus advances under Gen. Order No. 28.

In the complaint of the Atlantic Refining Co. the I. C. C. has decided that charges for switching numerous carload shipments of bituminous coal at Philadelphia were unreasonable and unlawful and awards the company reparation.

Deciding the complaint of Frank A. Coakley and other retail coal dealers of South Utica, N. Y., the commission holds that the rates charged on anthracite coal from the Carbondale district of Pennsylvania to South Utica, N. Y., for delivery on the West Shore R.R., are unreasonable and prejudicial because they exceed rates to Utica.

In the complaint of Parlin and Orendorff Co., the commission decides that the rates of \$3.45 @ \$3.40 per ton on bituminous coal from Yamacraw and Worley, Ky., via Peoria, Ill., to Canton, Ill., from September, 1919, to February, 1919, were unreasonable because they exceeded rates of \$3.25 and \$3.15 per ton, established June 10, 1919, and awards reparation to the complainant.

A brief has been filed by the defendant railroads in the complaint of the Du Pont

Co., defending the rate of \$3.47 on coal from Midland, Ind., to Grayling, Mich.

In a tentative report an I. C. C. examiner in the case of the Cannon Manufacturing Co. vs. the Southern Railway recommends that rates on coal from Morning Glory, Tenn., to Kannapolis and Concord, N. C., and from Catoosa, Tenn., to Albemarle, N. C., be declared unreasonable because they exceed rates from the same points to various points in Carolina territory.

The Comptroller of the Treasury has authorized payment of a claim of \$233 by the Midland Coal Co., of Kansas City, Mo., against the Interior Department.

The Interstate Commerce Commission has ordered an investigation into the failure of Missouri to increase intrastate rates in accordance with the interstate rate increase recently ordered. An allegation of the railroads in this case is that the Public Service Commission of Missouri has permitted increases in intrastate rates on coal and coke, among other articles while not permitting the increased interstate rates to become effective. The case will be heard before an examiner of the commission at St. Louis on Nov. 8.

The capacity of mines on the Morgantown & Wheeling R.R., rather than the physical capacity of that railroad which connects with the Monongahela Ry. at Madsville, W. Va., will be the basis on which cars will be allotted hereafter by the Monongahela Ry. as a result of a decision of the Interstate Commerce Commission, which reverses the policy of the Monongahela and which will also force the Monongahela Ry. to make up for the shortage its arbitrary position caused.

Mines along the Monongahela Ry. and the Morgantown & Wheeling Ry. will be plentifully supplied with cars because the Interstate Commerce Commission has held that the Pittsburgh & Lake Erie and the Pennsylvania R.R. did not allot all the cars to which mines on the Monongahela were entitled.

It is reported that the railroads contemplate making application to the I. C. C. for further advances in freight and passenger rates, based on their failure to obtain increased net revenues due to increased cost of labor and coal.

The **Pennsylvania Public Service Commission** has granted the application of the Pennsylvania R.R. Co. for the revocation of its order of 1917, governing the supply of open-top equipment to wagon mines. Under the order just issued, the Interstate Commerce Commission order of Sept. 19, 1920, will apply to intrastate commerce in coal. In other words, open-top equipment will go to mines prepared to load cars and move them in quick order. The commission holds that the public interest will be best served during car and equipment shortage by getting coal over the lines as quickly as possible. This means that wagon mines, having neither tipples nor sidings of their own, will have to confine themselves chiefly to purely local trade.

The **Illinois Central Railroad Co.** has announced that it has placed an order with the Baldwin Locomotive Works, for 25 new switching engines for use in the Southern Illinois coal fields. This comes as a direct cause from the increased coal traffic up the main line to Chicago and other large industrial centers. Contrary to many reports that the Illinois Central is falling down on the coal traffic problem this fall, it has shown that it is holding its own with other roads. The mines which are entirely dependent upon the I. C. for cars are now working 80 and 90 per cent full time.

Double tracking of the Baltimore & Ohio R.R. between Fairmont and Connellsville, known as the Fairmont, Morgantown & Pittsburgh division, seems imminent, according to present plans of officials of the Baltimore & Ohio, and if such an improvement is undertaken it will involve an outlay of about \$2,000,000, it is understood.

Announcement has been made to the effect that the B. & O. will improve thirty miles of line in the Eastern Kentucky district between Shelby Station and Jenkins, in the Elkhorn field.

There has been a separation of the Millers Creek field from the Sandy Valley & Elkhorn, served by the Chesapeake & Ohio, in so far as car distribution is concerned, and hereafter the supply for the Millers Creek region will have its own supply.

## Industrial News

The Cement Gun Co. announces the removal of its main office from Allentown, Pa., to Cornwells, Bucks county, Pa., (a suburb of Philadelphia), where the vice president and general manager, Mr. B. C. Collier, Mem. A. S. C. E., will connect himself in an executive capacity in the distribution of the Traylor trucks and farm tractors, manufactured by the Traylor Eng. & Mfg. Co.

The Ohio Valley Improvement Association has arranged to meet at Paducah, Ky., Nov. 16 and 17, and will outline plans for an effort to get Congress to appropriate a larger sum for hurrying lock and dam work on the Ohio next season.

The Illinois state miners' examining board, will hold an examination at the Illinois state arsenal in Springfield, Nov. 22. Other examinations set for November are as follows:—Nov. 8, Centralia; 9, DuQuoin; 10, Benton; 11, Harrisburg; 12, Marion; 13, Percy; 15, Collinsville; 16, Staunton; 17, Danville; 18, Canton; 19, Peoria.

## Association Activities

### Smokeless Coal Operators' Association of West Virginia

Serious consideration was given by the Smokeless Coal Operators' Association of West Virginia at its meeting held in New York, on Oct. 14, to the shortage of coal in the Panama Canal Zone and also to the shortage of coal in Virginia. Impressed with the importance of the fuel needs of the Panama Canal and of the Panama R.R., and informed that 20,000 tons of smokeless coal per month over and above the present supply were necessary, assurances were given that the necessary tonnage would be furnished at a price of \$4.30 per ton, not counting any addition to the cost by virtue of a wage advance.

Tangible action was taken looking toward meeting the situation in Virginia after the opinion was freely expressed that the Virginia situation should be taken care of. In order to see that the requirements of Virginia consumers were met a special committee was created. The committee consists of one representative from each of the four smokeless districts of West Virginia as follows: O. M. Deyerle, Pocahontas; C. C. Morfit, Tug River; G. H. Caperton, New River; George Wolfe, Winding Gulf.

### Upper Potomac Coal Association

Resolutions recently presented to the Department of Justice by Northern West Virginia operators and which form the basis for the guidance of the Fair Practice Committee of the Northern West Virginia Association, were explained to the members of the Upper Potomac Coal Association by Douglas Gorman, of Baltimore, at a meeting of the association held in Cumberland, Md., on Oct. 11. Mr. Gorman represents the Upper Potomac region on the Fair Practice Committee and conveyed the wishes of the Upper Potomac Association with respect to the action or actions to be taken by the Fair Practice Committee.

### Northern West Virginia Operators Association

A meeting of the Fair Practice Committee of the Northern West Virginia operators was held in Wheeling on Tuesday, Oct. 19, for the purpose of giving further impetus to its plans to keep down the price of coal. Since the committee began to function there has been rather a marked decrease in prices of coal produced in Northern West Virginia.

It was rumored in connection with the Wheeling meeting of the Fair Practice Committee that prosecution of the operators of Northern West Virginia would be resumed at the term of federal district court, scheduled to be begun on Tuesday, Oct. 19.

The average price of coal to consumers in West Virginia at the mines will be between \$5 and \$6 a ton as the direct result of action taken by the Fair Practice Committee of the Northern West Virginia Op-

erators' Association at a series of meetings held during the week ending Oct. 18 in Washington and New York.

Everett Drennen, chairman of the committee, acted as its spokesman in announcing a price of \$5 a ton for run of mine and \$6 a ton for screened coal, at the mine, for consumers in Northern West Virginia.

During the course of the committee's session in New York a telegram was received from Attorney-General Palmer, the text of which was as follows:

"Referring to your report as chairman of a committee of bituminous coal operators from the northern district of West Virginia that prices of bituminous coal delivered in that district have been recently substantially reduced through the efforts of your committee. This is gratifying, but does not afford relief to the rest of the country. It is of the highest importance that the reduction in prices thus begun should be extended so as to include operations in other districts and coal for delivery throughout the country."

In reply the following telegram was sent to the Attorney-General.

"Your telegram this date referring to the report of the Fair Practice Committee of Northern West Virginia coal operators received. Our committee will immediately exert every effort to follow your suggestion."

## Trade Catalogs

**Worthington Marine Pumps and Auxiliaries.** Worthington Pump and Machinery Corp., New York, N. Y. Catalog BK-3,000. Pp. 125, 6 x 9 in., illustrated. Contains descriptive matter for general use in marine circles.—Advertiser.

**The Oxygraph.** David-Bournonville Co., Jersey City, N. J. Pp. 11; illustrated; 8½ x 11 in. Illustrating oxy-acetylene cutting with Oxygraphs No. 1-A and No. 2.

**C-H Motor Control Apparatus.** Cutler-Hammer Mfg. Co., Milwaukee, Wis. Publication 860; pp. 40; 8½ x 11 in.; illustrated. Giving information concerning control apparatus for use with motor driven pumps, compressors and similar machines.—Advertiser.

## Personals

C. A. Norton, until recently with the Consolidated Coal Co. of St. Louis, has been appointed secretary and treasurer of the Wallace Coal Co. of that city.

W. W. Kicker, who recently resigned as superintendent of the Palos Division of the Republic Iron & Steel Co., has been appointed by Governor Kilby as assistant Alabama mine inspector, with jurisdiction in the sixth inspection district; vice John R. Smith resigned.

Timothy R. Atkinson and Francis J. Seery, engineers, appointed to the Geological Survey during the war to make power investigations in connection with fuel conservation, have resigned, the emergency having passed.

James R. Offield, of Chicago, was re-elected president at the annual meeting of the directors and stockholders of the Bon Air Coal and Mining Co., Bon Air, Tenn. Other officials elected were W. J. Cummins, vice-president and general manager; Frederick Leake, New York, secretary and John MacBowman, Chicago, treasurer.

Allen MacLeod of Boston recently returned from an eight months trip to Europe on which he made a particular study of the coal situation abroad.

E. V. Reinhold has been appointed assistant purchasing agent in charge of fuel for the New York Central R.R. Co., with office at New York City.

H. C. Greer, coal operator and manufacturer of Morgantown, W. Va., has purchased the J. P. McKinney residence in Pittsburgh.

E. Floyd has resigned his position as manager of the Nanosee-Wellington Collieries, Ltd., Nanosee Bay, Vancouver Island.

Harwell G. Davis, of Montgomery, Ala., assistant attorney general, has been appointed by Governor Kilby as state fuel administrator a recent act of the legislature having created this office to provide

for the distribution of coal within the state and the fixing of prices thereon in emergencies of coal shortage such as now exists. Mr. Davis will be charged with the duty of placing in effect the agreement between the Governor and operators recently entered into, fixing a schedule of prices at the mines for all coal in excess of contract obligations to be distributed to consumers throughout the state. He will also arrange a schedule of maximum prices to be charged by retailers.

The coal men's golf tournament at Buffalo, in which 14 contestants took part, after having been on for about a fortnight, was concluded on Oct. 6th. J. Burt Ross winning over Grant H. Jones by a single hole, which had to be played extra, after the regular 18 had proven a tie. Mr. Ross takes a silver cup as prize. Extraordinary interest has been taken in the tournament and it is now stated that a much larger one will be played next season.

William H. Sterling has resigned as superintendent of the Docena Mine of the Tennessee Coal, Iron & Railroad Company, at Docena, near Pratt City, Ala., and has returned to his old home in southwestern Pennsylvania.

M. R. Campbell of the Geological Survey is in Virginia reviewing some work in the bituminous coal fields.

Roy C. Brett, engineer, who was appointed during the war to make power investigations in connection with the conservation of fuel, has resigned from the Geological Survey, the emergency having passed.

Thomas H. Edelblute has resigned as secretary of the Pittsburgh Mining Machinery Co., and has opened offices in the Fulton Bldg., Pittsburgh, Pa., to engage in a general brokerage business in coal and mining equipment.

Frank Mann, of Chicago, has accepted a position with the Sterling-Midland Coal Co., having formerly been connected with the Chicago, Wilmington & Franklin Coal Co. Both companies have large operations in southern Illinois.

T. J. Brown has retired from the management of the Inverness Coal Co. It is less than a month since Mr. Brown resigned as manager of the Nova Scotia Steel and Coal Co. and joined the Inverness staff. Report has it that Mr. Brown may join the executive of the British Empire Steel Corporation.

J. Thomas Dovey, ten years president of the Seattle Engineers Co. and well known in Northwest engineering circles, has been recently made assistant vice president of the Pacific Coast Coal Co.

A. Stephen Knowles announces the opening of an office in New York City to do general consulting work in coal and its by-products, specializing in testing coal for coking properties, preparing reports on plants and processes, and designing, constructing, and operating by-product ovens.

At a recent meeting of the Board of Directors, J. J. Arnsfeld, advertising manager of Fairbanks, Morse & Co., was elected president of the Engineering Advertisers' Association of Chicago to fill the vacancy made by the resignation of A. H. Hopkins, who severed his connection with the C. F. Pease Co. to take charge of the domestic advertising division of the J. Roland Kay Co. Mr. Keith J. Evans, advertising manager of Jos. T. Ryerson & Son, was elected vice-president, and Julius Holl, advertising manager of Link-Belt Co., was elected to the board of directors to fill the vacancy made by Mr. Hopkins' retirement.

## Coming Meetings

Illinois Mining Institute will hold its next meeting on Nov. 20 at Springfield, Ill. Secretary, Martin Bolt, Springfield, Ill.

Coal Mining Institute of America will hold its annual meeting Dec. 8, 9 and 10, 1920, in the Chamber of Commerce Auditorium Pittsburgh, Pa. Secretary, H. D. Mason, Jr., Chamber of Commerce Bldg., Pittsburgh, Pa.

American Mining Congress will hold its annual meeting at Denver, Col., Nov. 15 to 19. Secretary, J. F. Callbreath, Munsey Building, Washington, D. C.

The American Society of Mechanical Engineers will hold its annual meeting Dec. 7, 8, 9 and 10 in the Engineering Societies Building, 23 West 39th St., New York City. Secretary, Calvin W. Rice, 23 West 39th St., New York City.